

(Abstract)

M.A.Applied Economics Programme- Scheme , Syllabus and Pattern of Question papers under Choice Based Credit and Semester System (in Outcome Based Education system- OBE) in Affiliated Colleges - Implemented with effect from 2023 admissions - Orders issued.

ACADEMIC C SECTION

ACAD C/ACAD C4/17465/2023 (II)

Dated: 23.08.2023

- Read:-1. U.O No. Acad C2/429/2017 Dated 08.09.2020
2. U. O No. Acad C1/21246/2019 Dated 07.12.2020
3. U.O. No. Acad/C1/21246/2019 dated 16.02.2023 ,
4. U.O. No. Acad/C1/21246/2019 dated 20.04.2023
5. Minutes of the meeting of the CSMC & Conveners of Adhoc committee held on 15.06.2023
6. U.O. No. Acad/C1/21246/2019 dated 09.08.2023
7. Minutes of the Meeting of the Adhoc committee for Economics programme held on 10.08.2023
8. Syllabus submitted by the Convenor, Ad hoc committee for Economics vide e-mail dtd.21.08.2023

ORDER

1. A Curriculum Syllabus Monitoring Committee comprising the members of Syndicate was constituted for the Syllabus revision of UG & PG Programmes in Affiliated Colleges, vide paper read (1) above and as per the recommendation of this Committee in its meeting held on 20.11.2020, constitute a sub Committee to prepare the Regulation for PG programmes in Affiliated Colleges vide paper read (2) above.
2. As the reconstitution of Board of Studies of the University is under consideration of the Hon'ble Chancellor, considering the exigency of the matter, Ad hoc Committees were constituted vide paper read (3) above, & it has been modified vide paper read (4) above to revise the Curriculum and Syllabus of PG Programmes in Affiliated Colleges w.e.f 2023-24 academic year.
3. The combined meeting of the Curriculum Syllabus Monitoring Committee & Conveners of Ad hoc committee held on 15.06.2023 at syndicate room discussed in detail the draft Regulation, prepared by the Curriculum Syllabus Monitoring Committee, for the PG programmes under Choice Based Credit and Semester System to be implemented in Affiliated Colleges w.e.f 2023 admission and proposed the different phases of Syllabus revision process such as subject wise workshop , vide paper read (5) above.
4. Revised Regulation for PG programmes under Choice Based Credit and Semester System (in OBE- Outcome Based Education System) was approved by the Vice Chancellor on 05.08.2023 and implemented w.e.f 2023 admission vide paper read (6) above.
5. Subsequently, as per the paper read (7) above, the Ad hoc committee for Economics programme finalized the Scheme, Syllabus and Pattern of question papers of M.A. Applied Economics, programme to be implemented w.e.f 2023 admission
6. As per the paper read (8) above, the Convenor, Ad hoc committee for Economics, submitted the finalized copy of the Scheme, Syllabus and Pattern of question papers of M. A. Applied Economics, programme for implementation w.e.f 2023 admission
7. The Vice Chancellor after considering the matter in detail and in exercise of the powers of the Academic Council conferred under section 11(1) Chapter III of Kannur University Act, 1996 and all other enabling provisions read together with, **accorded sanction to implement the Scheme, Syllabus and Pattern of question papers of M.A.Applied Economics programme under Choice Based Credit and Semester System (in OBE- Outcome Based Education System) in Affiliated Colleges under**

the University w.e.f 2023 admission , subject to report to the Academic Council.

8. The Scheme, Syllabus and Pattern of question papers of M. A .Applied Economics, programme under Choice Based Credit and Semester System (in OBE- Outcome Based Education System) in Affiliated Colleges under the University w.e.f 2023 admission is uploaded in the University website

9. Orders are issued accordingly.

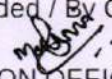
Sd/-

Sajesh Kottambrath
Assistant Registrar1
For REGISTRAR

To: 1. Principals of Affiliated Colleges offering M.A.Applied Economics Programme
2. Convenor, Curriculum Syllabus Monitoring Committee.
3. Convener, Ad hoc Committee for Economics Programme

Copy To: 1. The Examination Branch (Through PA to CE)
2. PS to VC / PA to PVC / PA to R/PA to FO
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5. Web manager (for uploading on the website)

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SECTION OFFICER







Kannur University

Choice Based Credit and Semester System for Post-graduate Programme in Affiliated Colleges -2023

(OBE – Outcome Based Education – System)

(KUCBCSSPG 2023)

M.A. APPLIED ECONOMICS PROGRAMME

2023-24 ADMISSION ONWARDS

KANNUR UNIVERSITY



VISION AND MISSION STATEMENTS

VISION: To establish a teaching, residential and affiliating University and to provide equitable and just access to quality higher education involving the generation, dissemination and a critical application of knowledge with special focus on the development of higher education in Kasaragod and Kannur Revenue Districts and the Mananthavady Taluk of Wayanad Revenue District.

MISSION:

- To produce and disseminate new knowledge and to find novel avenues for application of such knowledge.
- To adopt critical pedagogic practices which uphold scientific temper, the uncompromised spirit of enquiry and the right to dissent.
- To uphold democratic, multicultural, secular, environmental and gender sensitive values as the foundational principles of higher education and to cater to the modern notions of equity, social justice and merit in all educational endeavours.
- To affiliate colleges and other institutions of higher learning and to monitor academic, ethical, administrative and infrastructural standards in such institutions.
- To build stronger community networks based on the values and principles of higher education and to ensure the region's intellectual integration with national vision and international standards.
- To associate with the local self-governing bodies and other statutory as well as non-governmental organizations for continuing education and also for building public awareness on important social, cultural and other policy issues.

PROGRAMME OUTCOMES (POs)

Programme Outcomes (POs): Programme outcomes can be defined as the objectives achieved at the end of any specialization or discipline. These attributes are mapped while a student is doing graduation and determined when they get a degree.

PO 1. Advanced Knowledge and Skills: Postgraduate courses aim to provide students with in-depth knowledge and advanced skills related to their chosen field. The best outcome would be to acquire a comprehensive understanding of the subject and develop specialized expertise.

PO 2. Research and Analytical Abilities: Postgraduate programmes often emphasize research and analytical thinking. The ability to conduct independent research, analyse complex problems, and propose innovative solutions is highly valued.

PO 3. Critical Thinking and Problem-Solving Skills: Developing critical thinking skills is crucial for postgraduate students. Being able to evaluate information critically, identify patterns, and solve problems creatively are important outcomes of these programs.

PO 4. Effective Communication Skills: Strong communication skills, both written and verbal, are essential in various professional settings. Postgraduate programs should focus on enhancing communication abilities to effectively convey ideas, present research findings, and engage in academic discussions.

PO 5. Ethical and Professional Standards: Graduates should uphold ethical and professional standards relevant to their field. Understanding and adhering to professional ethics and practices are important outcomes of postgraduate education.

PO 6. Career Readiness: Postgraduate programs should equip students with the necessary skills and knowledge to succeed in their chosen careers. This includes practical skills, industry-specific knowledge, and an understanding of the job market and its requirements.

PO 7. Networking and Collaboration: Building a professional network and collaborating with peers and experts in the field are valuable outcomes. These connections can lead to opportunities for research collaborations, internships, and employment prospects.

PO 8. Lifelong Learning: Postgraduate education should instil a passion for lifelong learning. The ability to adapt to new developments in the field, pursue further education, and stay updated with emerging trends is a desirable outcome.

Preface

The Master of Arts Programme in Applied Economics is designed to provide students with advanced knowledge and skills in economic theory, analysis, and research. The programme aims to deepen the understandings on economic concepts and principles, while also equipping the students with practical tools to analyse real-world economic problems and develop effective policy solutions. The syllabi of this programme are carefully crafted by incorporating emerging frontiers of Economics. The program offers a strong foundation in economic theory, covering microeconomics, macroeconomics, and econometrics. The students have been given the opportunity to explore in specific areas of economics include public economics, international economics, development economics, financial economics, environmental economics, and developmental issues of Indian economy. A strong emphasis is placed on developing students' quantitative and analytical skills. Courses on advanced mathematics, statistical analysis, and econometric modelling are included to enable students to conduct rigorous economic research. The programme also provide training in research methods, including data collection, econometric analysis, and research design. Students can learn how to critically evaluate economic literature, conduct independent research, and write scholarly papers. Within the time constraint, the ad hoc committee has undertaken commendable efforts for a qualitative transformation of the curriculum and syllabi to equip the undergraduates to face the complexities and challenges emerging out of new developments. The present syllabus is an outcome of serious academic deliberations by the ad hoc committee (Rajeev M, Sujith C, Rejuna C A, Jijikumari T, Shanavas P H, Narayanan P, & N M Sreekumar) constituted by Kannur University for drafting syllabus for the M A Economics/Development Economics/Applied Economics Degree Programme. 12 rounds of online meeting were held from 01-06-2023 to 17-07-2023. One full day online workshop is conducted on 05-07-2023 in which 30 post graduate teachers working under the affiliated colleges of Kannur university are actively contributed to the discussions. Suggestions and proposals from teachers were consolidated and presented in an offline workshop organised at the Kannur university campus Thavakkara on 07-07-2023. A series of review meeting were held in continuation with the workshop and the final draft is prepared. We express our sincere gratitude to Dr. A Ashokan, Member Syndicate, Kannur University, and Dr. Hari Kurup K K, Professor (Rtd), Department of Economics, Govt. College Kasaragod and all teachers associated with this endeavour, for their sincere contribution. We express our profound gratitude to the Honourable Vice Chancellor, Pro-Vice Chancellor, Members of the Syndicate and the Academic Council of Kannur University for their leadership and guidance in this endeavour.

**Dr. Rajeev M, Convenor, Ad hoc Committee on M A
Economics/Development Economics/Applied Economics Programme.**

PROGRAMME SPECIFIC OUTCOMES (POS)

This curriculum and syllabi of M A Applied Economics Programme of Kannur University has been designed to provide students with advanced knowledge in economic theory and also offers practical knowledge and skills to analyse real-world economic issues, apply economic principles to various contexts, and propose evidence-based solutions. The programme aims to inculcate critical thinking, analytical skills, and a deep understanding of economic principles to address complex economic challenges and contribute to evidence-based policy-making. The applied nature of the Programme, enables the students to become effective economic analysts, consultants, researchers, and policy advisors in various sectors, including government, international organizations, think tanks, NGOs, and the private sector. The specific outcomes of the programme are summarized below:

1. The students get an in-depth understanding of advanced economic theories, concepts, and models across various subfields of economics.
2. The students demonstrate proficiency in applying economic concepts and theories to analyse complex real-world economic problems and make informed policy recommendations.
3. The students develop skills in interpreting economic data, constructing and analysing econometric models, and using statistical software packages to draw meaningful conclusions and insights.
4. The students Specialize in analysing specific sectors of the economy (e.g., agriculture, finance, healthcare) and understand the unique challenges and opportunities they present.
5. The students apply economic principles and analytical tools to analyse and evaluate public policies and assess their impact on economic outcomes.
6. The Students Cultivate critical thinking skills to identify and analyze complex economic problems, develop innovative solutions, and evaluate the potential outcomes of alternative policy interventions.
7. The students can engage in internships, case studies, or field projects to gain hands-on experience in applying economic theories and concepts to real-world situations.

AD HOC COMMITTEE

Sl. No	Name & Designation
1	Dr. Rajeev M, Associate Professor, Department of Economics, S N College Kannur (Convenor)
2	Sri. Sujith C, Assistant Professor, Department of Economics, Government Brennen College, Thalassery.
3	Dr. Rejuna C A, Assistant Professor, Department of Economics, Government College, Kasaragod
4	Dr. Jijikumari T, Associate Professor, Department of Development Economics, St. Pius X th College Rajapuram
5	Dr. Shanavas P H, Assistant Professor, Department of Economics, Krishna Menon Memorial Government Women's College, Kannur
6	Dr. Narayanan P (Puthiyilleth), Assistant Professor, Department of Economics, Krishna Menon Memorial Government Women's College, Kannur
7	Dr. N M Sreekumar, Associate Professor, Department of Economics, SES College Sreekandapuram.

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PROGRAMME STRUCTURE			
Sl. No	Category of course	Number of courses	Credits
1	Core Courses	16	64
2	Elective Courses	3	12
3	Open Elective Course	1	4
Total		20	80

WORK AND CREDIT DISTRIBUTION STATEMENT – SEMESTER WISE					
Sem	Course Title	Credits	Contact Hours per Week	Total Credit	Total Hours
I	Core 1- Micro Economic Theory I	4	5	20	25
	Core 2- Macro Economic Theory I	4	5		
	Core 3- Quantitative Techniques for Economic Analysis I	4	6		
	Core 4- Environmental Economics	4	4		
	Core 5- Indian Economy – Structural Changes and Growth	4	5		
II	Core 6- Micro Economic Theory II	4	5	20	25
	Core 7- Macro Economic Theory II	4	5		
	Core 8- Quantitative Techniques for Economic Analysis II	4	6		
	Core 9- Basic Econometrics	4	5		
	Core 10- Indian Economy – Development Issues with Special Reference to Kerala	4	4		
III	Core 11- Public Economics	4	5	20	25
	Core 12- Mathematical Economics	4	5		
	Core 13- Advanced Econometrics	4	5		
	Elective-1	4	5		
	Open Elective-1	4	5		
IV	Core 14- Operation Research for Economic Analysis	4	6	20	25
	Elective - 2	4	6		
	Elective - 3	4	6		
	Core 15- Project	4	7		
	Core 16- Viva	4			
Total				80	100

CORE COURSES

COURSE CODES & MARK DISTRIBUTION STATEMENT

Course Code	Course Title	Exam Hours	Marks IE	Marks ESE
MAACO01C01	Core 1- Micro Economic Theory I	3	15	60
MAACO01C02	Core 2- Macro Economic Theory I	3	15	60
MAACO01C03	Core 3- Quantitative Techniques for Economic Analysis I	3	15	60
MAACO01C04	Core 4- Environmental Economics	3	15	60
MAACO01C05	Core 5- Indian Economy – Structural Changes and Growth	3	15	60
MAACO02C06	Core 6- Micro Economic Theory II	3	15	60
MAACO02C07	Core 7- Macro Economic Theory II	3	15	60
MAACO02C08	Core 8- Quantitative Techniques for Economic Analysis II	3	15	60
MAACO02C09	Core 9- Basic Econometrics	3	15	60
MAACO02C10	Core 10- Indian Economy – Development Issues with Special Reference to Kerala		15	60
MAACO03C11	Core 11- Public Economics	3	15	60
MAACO03C12	Core 12- Mathematical Economics	3	15	60
MAACO03C13	Core 13- Advanced Econometrics	2+1*	15	40+20**
MAACO04C14	Core 14- Operation Research for Economic Analysis	3	15	60
MAACO04C15	Core 15- Project	3	20	80
MAACO04C16	Core 16- Viva	-	-	50
* 2 hours for theory and 1 hour for practical				
** 40 marks for theory and 20 marks for practical				

ELECTIVE COURSES				
COURSE CODES & MARK DISTRIBUTION STATEMENT				
SEMESTER – III				
Course Code	Course Title	Exam Hours	Marks IE	Marks ESE
MAACO03E01	Development of Economic Ideas	3	15	60
MAACO03E02	Research Methodology and Data Analysis	3	15	60
MAACO03E03	Population Studies	3	15	60
MAACO03E04	Economics of Growth and Development	3	15	60
SEMESTER – IV				
MAACO04E05	Heterodox Economics	3	15	60
MAACO04E06	Agricultural Economics	3	15	60
MAACO04E07	International Trade Theories and Policies	3	15	60
MAACO04E08	Business Economics	3	15	60
MAACO04E09	Political Economy	3	15	60
MAACO04E10	Financial Economics	3	15	60

COMMON ELECTIVE COURSES				
COURSE CODES & MARK DISTRIBUTION STATEMENT				
SEMESTER – III				
Course Code	Course Title	Exam Hours	Marks IE	Marks ESE
MAACO03O01	Gender and Development	3	15	60
MAACO03O02	Economics of Travel and Tourism	3	15	60
MAACO03O03	Comparative Economic Systems	3	15	60
MAACO03O04	Disaster Management	3	15	60

Modular wise Distribution of Credits and Instructional Hours for each Courses

The Syllabus of each course is designed in tune with the requirements of an automated question bank. Syllabus of each course is divided in to four equal modules. Each module is further divided into two equal subunits. Each subunit is given equal weightage, so that the **distribution of marks and instructional hours should be equally shared among the subunits.**

End Semester Course Evaluation Pattern	
Assessment	For Core, Elective and Open Courses
EXTERNAL	80%
INTERNAL	20%

Assessment Pattern for Continuous Internal Evaluation Exam		
Component	Mark	Remarks
Component 1: Unit Test	5	Average of best two attempts
Component 2: Assignments	5	Case studies, Writing Research Proposals, Field Trips, Literature reviews, Book Reviews, Debates, Discussion Forums (can be online using LMS), Economic Blogs, Economic Vlogs, TED talk style presentations, Current event analysis, Data Interpretation exercises, Concept Mapping, Quizzes, etc (students can be evaluated based on all creative works and activities assigned by the teachers)
Component 3: Seminar/Viva	5	Any One
*Attendance shall not be a component in internal evaluation		
** Component 2 and Component 3 can be combined for courses on; Indian Economy (Preparation of an article based on Indian economy data sets), Environmental Economics (Compulsory Field Visits), Research Methodology (Preparation of a Research Proposal)		

Assessment Pattern for End Semester External Evaluation Exam				
Sl. No	Type of Questions	No. of Questions to be attempted	Marks	Total Marks
3-hour examinations	Short Answer Questions (3 marks each)	5 (out of 6)	15	60
	Short Essay Questions (6 marks each)	3 (out of 5)	18	
	Essay Questions (9 marks each)	3 (out of 5)	27	
2-hour examinations	Short Answer Questions (3 marks each)	4 (out of 5)	12	40
	Short Essay Questions (6 marks each)	2 (out of 4)	12	

PART A: SYLLABUS – CORE COURSES

CORE COURSE -1: MICRO ECONOMIC THEORY I

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
1	MAACO01C01	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- demonstrate a thorough understanding of core microeconomic principles, consumer choice theory, production theory, production and cost functions and market structures.
- analyse decision-making under uncertainty and risk, including the concept of expected utility and risk aversion.
- examine the profit-maximizing behaviour of firms under oligopoly and differentiate it with other different market structures, including perfect competition, monopoly, and monopolistic competition.
- identify instances of market failures, such as asymmetric information, public goods, and externalities, and evaluate potential remedies.
- evaluate the implications of externalities and public goods on market outcomes and discuss potential policy interventions.
- apply game theory concepts to analyse strategic interactions among individuals and firms in various economic settings.

Module I: Uncertainty and Choice

Sub Unit – I: The expected utility analysis: St. Petersburg paradox and Bernoulli's solution to the paradox, Neumann – Morgenstern Theorem and expected utility maximization – Different preference towards risk: Risk aversion, risk loving and risk neutral - Risk aversion: Risk aversion and fair bets, Risk aversion and insurance.

Sub Unit – II: The demand for risky assets: trade-off between risk and return – The portfolio or investor's choice problem: Choice between risk and return – The state preference approach to choice under uncertainty: Risk aversion under state preference model

Module II: Production and Cost

Sub Unit – I: Production functions: fixed proportions, Cobb Douglas and CES production functions (properties) – Production function with two outputs: Economies and diseconomies of scope, Degree of economies of scope – Technical progress: measurement, growth

accounting – technical progress in Cobb-Douglas production function: input augmenting technical progress

Sub Unit – II: Cost functions: properties of cost functions – Fixed Proportions, Cobb-Douglas and CES cost functions – Input substitution: Elasticity of Substitution – Dynamic changes in cost: The Learning curve

Module III: Game Theory and Oligopoly

Sub Unit – I: Gaming and strategic decisions – Co-operative Vs Non-co-operative games – dominant strategies – Nash Equilibrium and the product choice problem – maxi-mini strategies – mixed strategies: The battle of sexes – Repeated game: Tit for tat strategy, finite and infinitely repeated games – Sequential games – Commitment and credibility: bargaining strategy – Entry deterrence

Sub Unit – II: Equilibrium in oligopoly – Cournot Nash Equilibrium, Stackelberg and first mover advantage - Bertrand's Equilibrium: the Nash equilibrium in prices – Competition Vs Collusion: The prisoner's dilemma – Implication of prisoner's dilemma for oligopoly pricing: Price rigidity and kinked demand curves

Module IV: Information Asymmetry and Market Failure

Sub Unit – I: Efficiency of the competitive markets – Why markets fail: Market power, externalities, public goods, incomplete information and information asymmetry – Quality, uncertainty and the market for lemons: market for used cars – implications of asymmetric information: adverse selection, market for insurance and market for credit

Sub Unit – II: Market signaling: model of job market signaling – Principal-Agent problem: case of public and private enterprises, incentives in the Principal-Agent framework – moral hazard and hidden actions model – asymmetric information in the labour markets: efficiency wage theory – Imperfect information and the “Winner's Curse”.

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CORE COURSE -2: MACRO ECONOMIC THEORY I

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
1	MAACO01C02	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- demonstrate a comprehensive understanding of advanced macroeconomic theories, including theories of consumption, Investment, growth, business cycles, monetary and fiscal policy, and open economy macroeconomics.
- evaluate various macroeconomic models, such as the Keynesian model, IS-LM model, to analyze economic phenomena and policy implications.
- evaluate the effectiveness of fiscal policy in stabilizing the economy, understanding government budget constraints, and assessing the implications of public debt.
- apply macroeconomic concepts and models to analyze real-world economic issues and assess the effectiveness of macroeconomic policies.
- critically evaluate macroeconomic theories and policy proposals, recognizing their strengths, limitations, and empirical relevance.

Module I: Behavioural Foundations of Macroeconomics

Sub Unit I: Theories of Consumption - The Psychological Law of Consumption–Kuznets ‘s Consumption Puzzle–Fisher’s Intertemporal Choice Model–Permanent Income Hypothesis– Life Cycle Hypothesis – The Random Walk Hypothesis.

Sub Unit II: Theories of Investment - The Keynesian Investment Theory- Neoclassical Theory of Business Fixed Investment–The Accelerator Theory of inventory Investment–The financial theory of investment -Tobin ‘s Q Theory

Module II: Neo-classical Keynesian Synthesis

Sub Unit I: IS-LM Model- The Interaction of Real and Monetary Sector–The Neoclassical and Keynesian version of IS-LM Model–Fiscal and Monetary Policy Analysis in IS-LM Model– Fiscal Policy and Crowding out–Ricardian Equivalence. Unemployment and Labour Market – Neoclassical Labour Market Equilibrium – Keynesian Labour Market – Under Employment Equilibrium.

Sub Unit II: The Aggregate Supply in the Short and Long Run – Aggregate Demand and Price Determination– Keynes Effect, Pigou Effect and Real Balance Effect in the IS-LM Model. The Open Economy IS-LM - Mundell–Fleming Model- Marshall-Lerner Conditions

Module III: Theories of Business cycle and Stabilization Measures

Sub Unit I: Business Cycle: Great Depression and alternative view on causes- Accelerator-multiplier Interaction Model – Real Business Cycle Theory – Political Business Cycle- Minsky's financial instability theory.

Sub Unit II: Fiscal policy and Macroeconomic stabilization- Fiscal stimulus and stabilization- Monetary policy and stabilization measures.

Module IV: Theories of Money Demand and Supply

Sub Unit I: Theories of Money Demand- A Restatement of Quantity Theory of Money (Milton Friedman)- Inventory Theoretic Approach (William Baumol) – Liquidity Preference as Behavior Towards Risk (James Tobin) — The Buffer Stock Notion (David Laidler).

Sub Unit II: Theories of Money Supply- The Concept and Measurement of High-Powered Money – Sources of Variation in High Powered Money – The Money Multiplier Model – Factors affecting Money Multiplier – Behavioral Model of Money Supply

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- 26) Sorensen, P.B. and Whitta-Jacobsen, H.J. (2010): Introducing Advanced Macroeconomics: Growth and Business Cycles, 2nd Edition, McGraw-Hill.
- 27) Wickens, M. (2011): Macroeconomic Theory, 2nd edition, Princeton University Press.

**CORE COURSE - 3: QUANTITATIVE TECHNIQUES FOR ECONOMIC
ANALYSIS - I**

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
1	MAACO01C03	6	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- understand fundamental statistical and mathematical concepts, including matrix algebra, probability, sampling methods, hypothesis testing, and confidence intervals.
- differentiate various discrete and continuous probability distributions and their properties
- formulate and test economic hypotheses using appropriate statistical tests, and interpret the results in an economic context.
- learn to construct confidence intervals for population parameters using different confidence levels, and interpret the intervals

Module I

Sub Unit I: Determinant of a square matrix - Solution of a system of equations - Inverse method and Cramer's rule, Rank of a matrix, Characteristic equations and characteristic roots and vectors – Eigen value - Cayley- Hamilton theorem

Sub Unit II: Application of matrix algebra in Input-Output Analysis – basic concepts in input-output analysis - Structural co-efficient matrix – Hawkins-Simon conditions - Determination of final demand – Basic problem solving

Module II

Sub Unit I: Permutations and Combinations, Definitions of Probability – classical, empirical and axiomatic approaches – Addition and multiplication laws, conditional probability – Bayes' theorem, Random variables – probability distribution – Mathematical expectation – moments

Sub Unit II: Probability Distributions – Discrete Probability Distributions, Binomial, Poisson, Uniform, Multinomial – problem solving - Continuous probability distributions – basics of Normal, Lognormal, Pareto and Exponential Distributions – problem solving with normal distribution

Module III

Sub Unit I: Statistical Inference – meaning and scope - Concept of population, sample – Relevance of random sampling in statistical inference – properties of random sampling - determination of sample size – alternative views - sampling and non-sampling errors.

Sub Unit II: Sampling distributions – concept of law of large numbers and Central limit theorem - Standard error – Distributions of sample mean, Sample variance – chi square Student's t, and F distributions – Small and large sample properties of z, t, chi. square and F

Module IV

Sub Unit I: Estimations of populations parameters – point and Interval estimation – Properties of estimators – unbiasedness, consistency, efficiency and sufficiency -Confidence interval for Mean and Proportion and variance - Basic introduction to method of moments and maximum likelihood – assumptions, merits, demerits and uses (without proof and no problem solving required)

Sub Unit II: Testing of hypothesis – simple and composite hypotheses – Null and alternative hypotheses – directional and non-directional hypotheses - Type I and Type II error, Critical region – Level of significance, and exact level of significance – Test procedure – Degrees of freedom - Test of significance in respect of Mean and difference of means – conditions for applying z and t tests in a given context

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12. Yamane, Taro (2012): Mathematics for Economics: An Elementary Survey, Literary Licensing.

CORE COURSE - 4: ENVIRONMENTAL ECONOMICS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
1	MAACO01C04	4	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- demonstrate a thorough understanding of key environmental economic concepts, such as externalities, public goods, and market failures.
- analyse the concept of sustainable development, recognizing the interdependence between economic growth, social well-being, and environmental protection.
- integrate ecological principles into economic analysis, considering the interconnections between ecosystems and the economy.
- evaluate the effectiveness of various economic valuation methods (e.g., contingent valuation, hedonic pricing, and travel cost method) to estimate the economic value of environmental goods and services.
- understand the economic dimensions of climate change, including mitigation and adaptation strategies, and assess the costs and benefits of climate policies.
- evaluate the effectiveness of various environmental policy instruments, such as taxes, subsidies, cap-and-trade systems, and command-and-control regulations.

Module I: Environmental Economics & Economics of resource use

Sub Unit I: Environmental Economics- Multi-disciplinary nature-Environment and Ecology-structure of Eco-system-inter-linkages between Economy and environment-Material balance Model-Environmental cost of economic growth - Environmental Kuznets curve--environmental ethics and its basic approaches.

Sub Unit II: Growth pattern and management of renewable and non-renewable resources-theories of optimal use of resources-Economics of Natural resource use- Need for conservation of natural resources.

Module II: Sustainable Development and Environmental Accounting

Sub Unit I: Sustainable development and its indicators – equity concerns of sustainable development-Key approaches to sustainable development: Hart wick' - Solow approach, Safe Minimum Standard Approach - Daley's operational principle -SDGs -sustainable development challenges and solutions- progress of India towards sustainable development goals.

Sub Unit II: Accounting for the environment and green accounting, green economy, green manufacturing-green finance, green marketing, and green tourism-Tools of Corporate Environmental Management-environmental management system-environmental performance auditing -life cycle assessment-ISO standards-industrial ecology.

Module III: Environmental valuation and impact assessment.

Sub Unit I: Valuing the environment-meaning and types of environmental values-environmental love, environmental awareness, environmental respect, environmental Responsibility, environmental conservation, environmental co-existence, environmental sensitivity- Measures of economic valuation-market valuation- surrogate markets, wage-differential approach, opportunity cost method, choice modelling technique.

Sub Unit II: Expressed preference methods for valuing the environment: Contingent valuation method, trade off game method, costless choice method, Delphi method – Revealed preference methods for valuing the environment: hedonic price method, property value method. Environment impact assessment (EIA)- procedures, methods and limitations- EIA in India.

Module IV: Market Failure and Environmental Policies

Sub Unit I: Market failure and environmental goods-approaches and causes of market failure-market failure and externality- attributes of externality- internalizing externalities, Instrument for environmental protection- Direct Economic Instruments: Pollution fee and polluter pay principle, emission trading rights (tradable market permits), Deposit refund system, performance-based liability- Indirect economic instruments: taxes and subsidies.

Sub Unit II: Climate change and food security-impacts of climate change on agriculture with special reference to Kerala-adaptation and mitigation of climate change through credit subsidies - India's environmental policies-International summits on combating climate change- CMP 16, CMA 3 and COP26 – climate change performance index (CCPI)

(Note: compulsory field visit to various eco spots/ecologically sensitive places Not More Than 5 days. Report of field visit may be considered as assignment of this paper)

References:

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**CORE COURSE - 5: INDIAN ECONOMY: STRUCTURAL CHANGES AND
GROWTH**

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
1	MAACO01C05	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- demonstrate an in-depth knowledge and understanding of the nature, problems and functioning of Indian economy.
- study the major sectors of the Indian economy, including agriculture, industry, and services, and evaluate their contributions to economic growth and employment.
- evaluate India's trade policies, trade patterns, and foreign direct investment inflows, and understand the role of India in the global economy.
- analyse and interpret macroeconomic indicators, such as GDP growth, inflation, and unemployment, to assess the overall performance of the Indian economy.
- examine the patterns and determinants of poverty and income inequality in India and evaluate policies aimed at poverty reduction and inclusive growth.
- understand the economic reforms initiated in India since the 1990s and assess their impact on the Indian economy.

Module-1 Economic Growth, Structure and Reforms

Sub Unit I: Structural Changes in Indian Economy- Contribution of different sectors to output, income and employment- Growth rate across region/states- NITI Aayog and discontinuation of Central Planning- Debate on market v/s planned economy- Neo liberalism.

Sub Unit II: Structural Adjustment Reforms - Liberalisation, Privatisation and Globalisation- Evaluation of Economic Reforms- Global Economic Crisis and its impact on Indian economy- Second Generation Reforms- Inclusive Growth; Recent policy initiatives

Module II Sector wise analysis- Agriculture

Sub Unit I: Importance of agriculture- Trends, pattern and performance of agricultural growth- Changes in land use and cropping pattern- Crisis of Indian agriculture- New agricultural policy- WTO and Indian agriculture- - Agricultural Credit, marketing and subsidies.

Sub Unit II: Revolutions in agriculture- Evergreen revolution- Concept of food security- National food security Mission- Debate on GM crops- - Agricultural Sustainability

Module III Sector wise analysis- Industry and service sectors

Sub Unit I: Growth and pattern of Industrial development in India- Structural changes in Indian industries- Inter-state disparities in Industrial development- Role of FDI in India's

Industrial Performance- New Industrial Policy- Public sector enterprises and their performances- Debate on privatisation and disinvestment- Micro and small-scale industries- Industrial labour- - Industrial financing- Industrial growth and environment.

Sub Unit II: An over view of service sector in India- Transport and communication- IT- Tourism (Growth, performance, market size and exports)- Contribution of service sector to India's GDP- FDI inflow in service sector- Role of WTO in service sector - Global energy crisis- Role of IT sector- Infrastructure and economic development- Public investment in infrastructure.

Module IV India and Global economy

Sub Unit I: India's share in global trade- Share of global trade and capital flows- BOP position- Balance of trade (export and imports)- Foreign trade policy- - Foreign capital and MNC's in India- Inflation- Debate on WPI v/s CPI.

Sub Unit II: FDI and FPI- Role of FDI in India's Economic Development- Regional economic integration (SAARC, BRICS and G-20)- India as an emerging global economic power.

References:

1. J.K Misra and V.K Puri (2014): *Indian Economy; The Development Experience*, Himalaya Publishing House, Mumbai.
2. Ruddar Dutt and Sundaram (2016): *Indian Economy*, S Chand and Company, New Delhi.
3. Kapila, Uma (2013) *Two Decades of Economic Reforms in India; Towards faster Sustainable and more Inclusive Growth*, (3rd edition) Academic Foundation, New Delhi.
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5. Agarwal. A N (2013) *Indian Economy: Problems of Development and Planning*, Vikas Publishing House, New Delhi.
6. Bala Subramanyan (1993), *Selected Issues in Development Economics*, Oxford University Press.
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10. Jagadish Bhagavati, Aravind Panagariya (2012) *Reforms and Economic Transformation in India*, Oxford University Press.
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12. Gopalji and Suman Bhakri (2013) *Indian Economy, Performance and Policies*, Pearson, New Delhi.

CORE COURSE - 6: MICRO ECONOMIC THEORY II

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
2	MAACO02C06	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- define and assess Pareto efficiency and understand its importance in welfare economics as a benchmark for economic efficiency.
- evaluate various welfare criteria, such as Pareto optimality, social welfare functions, and the Kaldor-Hicks criterion, to assess the desirability of policy outcomes.
- understand the key concepts related to factor markets, including factors of production, factor prices, factor demand, and factor supply.
- examine monopsony and monopsonistic competition in factor markets, identifying how they affect factor prices and employment levels.
- understand the concept of markup pricing and how firms set prices based on cost-plus pricing or target markup strategies.
- analyse prospect theory and how it deviates from traditional expected utility theory in explaining risk preferences and decision-making under uncertainty.
- understand the core concepts and principles of institutional economics, including the role of institutions in shaping economic behavior.

Module I: General Equilibrium and Economic Efficiency

Sub Unit I: Perfectly competitive price system: The law of one price – Economic efficiency and welfare analysis: consumer surplus and producer surplus approach – The first fundamental theorem of welfare economics: Pareto efficiency and simple general equilibrium model – Equity and Efficiency – Distributional dilemma and second fundamental theorem of welfare economics: exchange with initial endowments

Sub Unit II: Partial and general equilibrium framework – Existence of general equilibrium prices: Excess demand functions – Walras' Law: Walras' proof of the existence of general equilibrium price, Brouwer's fixed-point theorem – Departing from the competitive assumptions: Theory of second best – Inefficiency and Dead Weight Loss

Module II: Product Pricing and Competitive Strategies

Sub Unit I: Modern Theories of the Firm – Baumol's sales revenue maximization hypothesis – Williamson's model of managerial discretion – Marris' model of managerial enterprise

Sub Unit II: Theory of product pricing – Marginalist controversy – Hall and Hitch report and

the Full Cost Pricing principle – Average cost pricing and mark-up rule – Barriers to entry: Bain's limit-pricing model – Sylos-Labini Model – Extended model of Franco Modigliani – Predatory Pricing and entry deterrence.

Module III: Factor Market and Employment of Factor Inputs

Sub Unit I: Competitive factor markets – Demand for factor with one variable input – Market demand and supply of inputs – Income and substitution effect of a change in wage rate: Backward bending supply curve for labour, Slutsky's equation of labour supply – Competitive labour market equilibrium – Marginal productivity theory and adding up controversy – Economic rent in the labour market

Sub Unit II: Imperfections in the factor market – Monopsony in labour market: Pricing in a Monopsony labour market – Monopoly power in the labour market: labour unions and equilibrium with union's goals – Modelling wage discrimination: Unionized Vs Non-unionized workers

Module IV: Behavioural Extension and Institutions

Sub Unit I: Behavioral economics: Behavioral economics and the economic man – Expected utility paradox: Allais paradox – Prospect theory: The value function, Decision weight function, Allais paradox and prospects theory – Endowment effect – Bounded Rationality – Intuitive judgment and biases: Anchoring effect and Framing effect – Neuroeconomics

Sub Unit II: Institutional Economics: Subject matter of institutional economics – Notion of 'Institutions': Formal and Informal institutions, social and economic institutions – New Institutional Economics: Contributions of North and Williamson.

References:

1. Nicholson, W., & Snyder, C. M. Microeconomic theory: Basic principles and extensions. Cengage Learning. Latest Edition
2. Pindyck, R. S., Rubinfeld, D. L., & Mehtha P L. Microeconomics. Pearson Education. Latest Edition
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24. Thaler, R. H. (2016). Behavioral economics: Past, present, and future. *American economic review*, 106(7), 1577-1600.
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26. Hodgson, G. M. (2004). *The evolution of institutional economics*. Routledge.
27. Commons, J. R. (1931). Institutional economics. *The American economic review*, 648-657.
28. Williamson, O. E. (2000). The new institutional economics: taking stock, looking ahead. *Journal of economic literature*, 38(3), 595-613.
29. Hodgson, G. M. (2007). The revival of Veblenian institutional economics. *Journal of economic issues*, 41(2), 324-340.

CORE COURSE - 7: MACRO ECONOMIC THEORY II

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
2	MAACO02C07	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- understand the rational expectations hypothesis and how it affects the behaviour of economic agents in decision-making.
- examine the Lucas critique and its implications for the evaluation of economic policies, highlighting the importance of accounting for agents' responses to policy changes
- understand the concept of sticky prices and how nominal rigidities can lead to short-run fluctuations in output and employment.
- study the role of menu costs in delaying price adjustments and its impact on aggregate demand and supply dynamics.
- analyse the role of fiscal policy in influencing aggregate demand, taking into account the concept of Ricardian equivalence.
- understand the need for coordination between fiscal and monetary policy to achieve macroeconomic stability.

Module 1: The Post Keynesian and New Classical Macroeconomics

Sub Unit I: The Post Keynesian and New Classical Macroeconomics –Monetarism: Basic elements of monetarism – Monetarists proposition.

Sub Unit II: New Classical Macroeconomics- Efficient Market Hypothesis Rational Expectation Hypothesis- The Lucas surprise supply function- Policy ineffective Theorem- The Lucas Critique- Rational Expectation and implication of Monetary policy-Supply side economics

Module II: New Keynesian and Neo-Keynesian Macroeconomics

Sub Unit I: New Keynesian Model - Basic framework, price stickiness (Calvo and Rottenberg)-Micro foundations of macroeconomics – Small menu cost model – Efficiency wage theories – Insider-Outsider model- The Random Walk of GDP.

Sub Unit II: Walrasian General Equilibrium-Re-interpretation of Keynes by Clower and Leijonhuvad-The Dual decision hypothesis- Neo-Keynesian quantity constrained models.

Module III: The Inflation- Unemployment Trade off

Sub Unit I: Inflation and Unemployment- Various theories of inflation-Monetarist view on inflation-Concept of core inflation-measures of inflation (CPI, WPI, Core, Headline, GDP deflator).

Sub Unit II: The Phillip's Relationship – Theoretical Underpinnings of Phillip's Curve – Natural Rate Hypothesis -NAIRU– Theory of Adaptive Expectation – Expectation Augmented Phillip's Curve –Modified Philips Curve- Cost of Inflation–Anti-inflationary measures- Search theory-DMP Model- Okuns law-sacrifice ratio

Module IV: Macroeconomic Policy

Sub Unit I: Monetary policy-Instruments of monetary policy-Monetary targeting- Inflation targeting- Interest rate targeting. Rule vs. discretion in the conduct of monetary policy- central bank-measures of monetary control.

Sub Unit II: Fiscal policy and Macroeconomic stabilization- Nature and scope of fiscal policy – Concept and definition of fiscal stabilization- Instrument of fiscal policy: Taxation, expenditure and debt – Fiscal stimulus and stabilization –Crowding-out effect – Ricardian Equivalence Theorem

Reference:

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18. Mankiw, N.G. and D. Romer (Eds.) (1991) – *New Keynesian Economics*; (Mit, Cambridge)

**CORE COURSE - 8: QUANTITATIVE TECHNIQUES FOR ECONOMIC
ANALYSIS II**

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
2	MAACO02C08	6	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- understand the concept of functions and their representation in various economic contexts.
- apply the rules of differentiation to find derivatives of various functions used in economics, such as demand, supply, and cost functions.
- understand the concept of marginality in economics, particularly in the context of demand, supply, cost, revenue, and production functions.
- use optimization techniques to economic problems, such as profit maximization, cost minimization, and utility maximization.
- understand the basic concepts of game theory, including players, strategies, payoffs, and the concept of Nash equilibrium
- apply hypothesis testing techniques to one-sample, two-sample, and paired data scenarios.
- familiarize with non-parametric hypothesis testing methods suitable for situations with non-normal or ordinal data.

Module I

Sub Unit I: Functions, limit of a function, continuity of a function, Derivative of a function - Rules of Differentiation, Higher order derivatives, differentiation of logarithmic functions, exponential functions and implicit functions –

Sub Unit II: Application of Derivatives – Meaning of a Derivative – rate of change – slope of a curve – Marginal concepts related to demand, supply, cost, revenue and production functions - Maxima and minima – Economic applications.

Module II

Sub Unit I: Functions of several variables - Partial differentiation –Total and Partial derivatives – Total derivatives – Rules of integration – Definite integral, area under a curve –estimation of producer and consumer surplus

Sub Unit II: Optimisation of economic functions- Optimisation of multivariable functions – unconstrained optimization – maximization of profit - constrained optimization with Lagrange multipliers – Consumers and producers equilibrium using constrained optimization.

Module III

Sub Unit I: Optimisation with inequality constraints - Linear programming -Characteristics of Linear Programming Problem (LPP) - Formulation of LPP - Solution of LPP using Simplex method – Duality - Uses of dual LPP and Shadow prices.

Sub Unit II: Essentials of game theory – basic concepts – zero sum game – non-zero-sum game – co-operative and competitive games – pay off matrix – pure and mixed strategy – maxmin and minimax – saddle point – solution of mixed strategy game – Nash equilibrium.

Module IV

Sub Unit I: Testing of hypothesis with Proportion, difference of proportions, Variance and Correlation coefficient – Testing the significance of regression co-efficient - Chi Square test of goodness of fit, and test for independence of attributes - ANOVA F test – One way and Two-way procedures – problem solving using Chi square and F statistics

Sub Unit II: Non --parametric tests – difference between parametric and non-parametric tests – advantages and disadvantages of non-parametric tests - sign test, Wilcoxon – Mann Whitney U Test, signed rank test – uses

References:

1. Baruah, Srinath (2001): Basic Mathematics and its Applications in Economics, McMillon India
2. Chiang, Alpha C (1984): Fundamental Methods of Mathematical Economics, McGraw Hill Publishing Co.
3. Gupta, S.P. (2012): Statistical Methods, Sultan Chand & Sons, New Delhi
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8. Yamane, Taro (1973): Statistics: An Introductory Analysis, 3rd edition, Joanna Cotler Books.
9. Yamane, Taro (2012): Mathematics for Economics: An Elementary Survey, Literary Licensing.

CORE COURSE - 9: BASIC ECONOMETRICS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
2	MAACO02C09	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- understand the concepts of the simple and multiple linear regression models and their interpretations in economic contexts.
- acquire the skills to estimate the parameters of a linear regression model using least squares estimation and interpret the estimated coefficients.
- understand the issues of autocorrelation, multicollinearity and heteroscedasticity in regression analysis and their sources, consequences and the remedial measures
- understand the concept of residuals and their significance in regression analysis as indicators of model fit.
- identify dummy and categorical variables in regression models and learn to interpret their effects in a regression model.
- differentiate between structural and reduced form equations and comprehend their roles in the analysis of simultaneous equation systems.
- identify endogeneity and simultaneity bias issues in simultaneous equation models and learn about techniques to address them.

(Bridge Course Content (Not for examination): Meaning and Definitions of econometrics – Basics of bivariate regression – Sample Regression Function and Population Regression Function - cross section and timeseries models - review of OLS method – Assumptions of classical linear regression model – Gauss Markov theorem and BLUE property – R^2 and adjusted R^2)

Module I: Simple Linear Regression

Sub Unit I: Testing the significance of the OLS estimators in simple linear regression models – Individual and overall significance - Violation of the assumptions of classical linear regression model – Serial/Auto correlation, Heteroscedasticity – causes, consequences, detection methods and solutions – HAC standard error

Sub Unit II: Basics of regression diagnostics – Ramsey’s RESET – Error Normality tests – tests for linearity - regression through the origin – interpretation of regression co-efficients in different functional forms (linear, log linear, semi-log, reciprocal and log reciprocal) – regression co-efficients as elasticity and growth rates

Module 2: Multiple Linear Regression

Sub Unit I: Introduction to multiple linear regression analysis using OLS – Assumptions underlying classical linear regression model as applicable to multiple regression – OLS

Estimation and interpretation of co-efficients - testing of individual and overall significance – use of adjusted R^2

Sub Unit II: BLUE property and Gauss-Markov theorem as applicable to multiple regression analysis using OLS (Matrix notation) - violation of CLRM assumptions in multiple regression analysis with reference to multicollinearity – causes, consequences, detection and solutions

Module 3: Regression involving Qualitative Variables

Sub Unit I: Regression with dummy explanatory variables – major applications and basic structural form – ANOVA and ANCOVA models - interpretation of slope and intercept in dummy variable regression– interactive effects – seasonal analysis - piecewise linear regression – structural stability and structural break – Chow test and applications – Dummy variable trap

Sub Unit II: Models with qualitative dependent variable (Binary choice models) – Linear Probability Model –logit and probit models – Multi response models (brief explanation regarding multinomial logit and ordered probit models) – Truncated and censored regressions – Tobit model

Module 4: Simultaneous Equation Models

Sub Unit I: Simultaneous equation models –Structural and reduced form equations of a simultaneous equation system – simultaneous equation bias – Instrumental variable estimation – Identification problem – Rank and order conditions

Sub Unit II: Estimation of simultaneous equation system – Recursive methods and OLS - Indirect Least Squares – 2 SLS and 3 SLS – Seemingly unrelated regression (SUR) model and feasible generalised least squares

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3. Gujrathi, D & Dawn C Porter (2017): *Basic Econometrics, 5th edition*, McGraw Hill.
4. Hamilton, James D. (2012): *Time Series Analysis*, Princeton University Press.
5. Johnston, J and John DiNardo (1997): *Econometric Methods 4th edition*, McGraw Hill Companies, London.
6. Maddala, G. (1977), *Econometrics*, McGraw Hill Kogakusha Ltd., Tokyo.
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8. Studenmund, A.H. (2006): *Using Econometrics: A Practical Guide*, Pearson Addison Wesley, New York.
9. Wooldridge, Jeffrey M. (2003): *Introductory Econometrics: A Modern Approach, Second Edition*, Thomson South Western, USA.

**CORE COURSE - 10: INDIAN ECONOMY – DEVELOPMENT ISSUES WITH
SPECIAL REFERENCE TO KERALA**

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
2	MAACO02C10	4	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- understand the current population size of India, its distribution across different age groups, gender composition and the population density in India.
- understand the concept of demographic dividend and its potential benefits for economic growth and development.
- understand different methods and approaches to measure poverty in India, including the use of poverty lines and multidimensional poverty indices.
- evaluate the effectiveness of various poverty alleviation programs and social welfare policies implemented by the government to reduce poverty.
- evaluate the impact of economic policies, labour market reforms, and social welfare programs on poverty, inequality, and unemployment.
- analyse the performance of different sectors of the Kerala economy, such as agriculture, industry, and services, and their contributions to overall economic growth.
- examine the state's fiscal management practices, debt levels, and the implications of public borrowing on the economy.

Module-I Demographic Profile

Sub Unit I: Major demographic features of India’s population- Demographic changes; trends and pattern- Census 2021 reports- Basic measures of demography: rates, ratios, data sources, Census, surveys and vital statistics

Sub Unit II: Sex, Age, Density structure of Indian population; Birth rate, death rate, Life expectancy and Infant Mortality; Trends and pattern- New Population Policy- Family planning and family welfare programmes in India and its evaluation- Demographic dividend- Human resource management.

Module II Development Issues: Poverty, Unemployment and Inequality

Sub Unit I: Poverty in India- Estimation of Poverty and their limitations- Recent Committee reports- Tendulkar, Saxena, Hashim and Rangarajan- Poverty Eradication Programmes- Trends in employment- Measurement Issues- Unemployment nature and problems- Recent employment guarantee programmes

Sub Unit II: Changing nature of labour market- Recent debates on poverty and employment during reforms- National urban livelihood- MGNREGA, PMGSY, Indira Avas Yojana; an

evaluation- Inequality; concept, types and measurement- Attempt towards inclusive growth- Right based approaches in employment, education and food.

Module III Structure and Growth of Kerala Economy

Sub Unit I: Structural changes in Kerala economy- Agricultural performance- Changes in the cropping and land use pattern- Problems faced by agricultural sector

Sub Unit II: Industrial backwardness- Development of infrastructure- IT, Power, Tourism, Health and Higher Education- Urbanisation; trends, pattern, causes and consequences

Module IV Development Issues of Kerala Economy

Sub Unit I: Demographic changes- Aging- Poverty- Educated Unemployment- Women Empowerment- Peoples Plan- Role of Panchayat Raj- Role of Micro finance.

Sub Unit II: Fiscal management in Kerala- Decentralisation- E-governance initiatives- Impact of migration and foreign remittances- In-migration workers in Kerala- Kerala and WTO.

Reference

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2. Dutt and Sundaram (2016): *Indian Economy*, S Chand and Company, New Delhi.
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9. M.A Oommen (ed) (1993) *Essays on Kerala Economy*, Oxford and IBM.
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14. R. Sthanumoorthy (ed) (2006) *Kerala Economy; Achievement and Challenges*, ICFAI, University Press, New Delhi.
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16. K.Rajan (ed) (2009) *Kerala Economy; Trends During the Post Reform Period*, Serial Publications, New Delhi.

CORE COURSE - 11: PUBLIC ECONOMICS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
3	MAACO03C11	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- comprehend the changing dimensions of public finance and the role of government in achieving economic goals such as allocation, distribution, and stabilization.
- critically analyse the determinants of public expenditure, its impact on the economy, and the challenges in designing efficient and equitable expenditure policies.
- evaluate different theories of taxation and understand the criteria for optimal taxation, including commodity taxation, income taxation, and their effects.
- examine the tax reforms in India, including GST, and evaluate their implications on the economy and the taxation system.
- Comprehend the principles of public debt management, debt sustainability, and the challenges associated with public debt in India.
- understand the role of fiscal federalism in India, intergovernmental transfers, and their implications.
- analyse the divisions of powers and functions between the central and state governments in India, and assess vertical and horizontal imbalances.
- equip with the essential knowledge required to assess, design, and implement effective public policies that address diverse economic challenges.

Module 1: An Introduction to Public Economics

Sub Unit I: Changing Dimensions of Public Finance - The role of government: Allocation, Distribution, and Stabilization functions- Issues related to market failure and government intervention - Changing Role of the State in a Globalized World.

Sub Unit II: Theory of Public and Private Goods- Lindahl's Equilibrium Model- Samuelsson's Theory of Optimal Allocation between Public and Private Goods- Peace and security as global public goods - Market failure and externalities: Negative and Positive externalities - Free rider problem and its implications - Non-private goods: Club goods, Merit goods and Demerit goods - Theory of public choice.

Module 2: Public Expenditure

Sub Unit I: Size of Public Expenditure - Maximum Social Advantage - The Median Voter Theorem: Basic Idea and Applications to Public Finance - Public Sector Pricing: Pricing of Public Utilities

Sub Unit II: Changing Pattern of Combined (Centre and State) Public Expenditure in India -

Major Recommendations of the Expenditure Reform Commission - Concepts, Measurement, and Magnitude of Subsidies in India- Fiscal Responsibility and Budget Management Act: An Assessment.

Module 3: Public Revenue

Sub Unit I: Theory of Taxation - Theory of Optimal Taxation: Criteria and Features - Optimal Commodity Taxation: Ramsey Rule and Inverse Elasticity Rule - Optimal Income Taxation: Model with Behavioral Response – Model without Behavioral Response (Mirrlees Model) - Impact of Taxation on Factors of Production: Labor and Capital

Sub Unit II: International Taxation: Tax Competition, Tax Havens, Base Erosion, and Profit Shifting - Direct and Indirect Taxes in India- Reforms of Direct and Indirect Taxes in India - GST (GST Law from a Constitutional Perspective, Main Features, Structure of GST-Dual Model, GST-Council, Performance of GST in India)

Module 4: Public Debt and Fiscal Federalism

Sub Unit I: Public Debt in India: Emerging Issues, Debt Burden and Future Generation - Principles of Public Debt Management - Debt Sustainability - Combined (Central and State) Public Debt in India-

Sub Unit II: Fiscal Federalism in India - Rationale for Intergovernmental Transfers - Vertical and Horizontal Imbalance - Intergovernmental Transfer Mechanism: Central Finance Commission – Trends in Finance Commission Transfers in India –Recommendations of Recent Finance Commission - State Finance Commissions – Transfer from Union Ministries- Centrally Sponsored Schemes and their Implications for Federalism – Fiscal performance of Kerala - Highlights of the Current Year Union Budget.

References

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2. Andmo, A. (1976). Optimal Taxation: An Introduction to the Literature. *Journal of Public Economics*, 6, 37-54.
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31. Tripathy, R. N. (1978). *Public Finance in Under-developed Countries*. The World Press, Calcutta.
32. Tyagi, B. P. (2004). *Public Finance*. Jai Prakash Nath & Co.
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CORE COURSE - 12: MATHEMATICAL ECONOMICS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
4	MAACO03C12	5	4	3

COURSE OUTCOMES:

At the end of the course, the students will be able to

- Understand optimization techniques to find solutions to economic problems, such as utility maximization, cost minimization, and profit maximization.
- apply mathematical tools to analyse consumer behaviour, producer theory, and market equilibrium in microeconomic settings.
- distinguish between different types of production functions, such as Cobb-Douglas, CES, VES and Leontief.
- Understand the mathematical formulation of equilibrium conditions under competitive markets, monopolistic competition and oligopoly models (Cournot Model, Stackelberg model, Bertrand Models)

Module I Theory of consumer demand

Sub Unit I: Utility maximisation and consumer behaviour-Slutsky equation -Derivation of demand function-ordinary and compensated – consumer surplus, equivalent variation and compensating variation – revealed preference (weak and strong axioms) – homogeneous and homothetic utility function, Indirect utility function-Duality in consumption-Roy's identity

Sub Unit II: Constant elasticity demand function – Linear expenditure system – Expected utility function and NM utility index - measures of risk aversion, state-preference approach, portfolio theory and pricing of risk, present discounted value approach to investment decisions, adjustments for risk.

Module-2 Theory of Production and Cost

Sub Unit I: Production function-TP, AP and MP- Homogeneous production function-producers equilibrium - Constrained Optimisation-Input demand function-empirical production function (CD, CES, VES).

Sub Unit II: Cost function-concepts-Derivation of cost function-Duality in production function-Shepherd's Lemma - Revenue Concepts – Profit maximisation- competitive market equilibrium

Module-3 Theory of Firm and Market

Sub Unit I: Market failure – imperfect markets – sources of monopoly power – monopoly market equilibrium – price discrimination – first, second and third degree – tax incidence - Monopolistic Competition.

Sub Unit II: Oligopoly – Cournot Model, Stackelberg model, Bertrand Model – Nash equilibrium – Maximisation of joint profit under collusive oligopoly.

Module 4 Determination of income and macro models.

Sub Unit I: National Income models - (static, comparative static, dynamic, open and closed economy) - IS-LM model and determination of equilibrium output in open and closed economy cases - Derivation of neo-classical labour demand and labour supply functions – labour market equilibrium.

Sub Unit II – Important mathematical models used in Economics – Keynesian Cross Model, Cobweb model, Multiplier Accelerator, Harrod-Domar Growth Model, Solow Swan Growth model.

References

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CORE COURSE - 13: ADVANCED ECONOMETRICS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
3	MAACO03C13	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to

- understand the characteristics of time series data, including trends, seasonality, and cyclical patterns.
- learn various time series models, such as autoregressive AR, MA, ARMA, ARIMA, VAR, ARCH, GARCH models.
- learn techniques to estimate and remove trends from time series data to focus on underlying patterns and explore methods for seasonal adjustment to isolate the seasonally adjusted component of a time series.
- understand the concepts of unit roots and cointegration and their relevance in long-run relationships between time series variables.
- learn Granger causality tests to examine causal relationships between variables.
- fit an OLS and run diagnostic tests to check the adequacy of time series models, such as tests for autocorrelation, heteroscedasticity and multicollinearity.

Model 1: Basics of Time Series Modelling

Sub Unit I: Introduction to time series models – Time series as a stochastic process– Basics of time series regression model – CLRM assumptions underlying a time series model – interpretation of OLS estimates - Stationarity and Non-Stationarity – trend stationarity – Deterministic and stochastic trends

Sub Unit II: Random walk and unit root– Random walk with drift - Testing stationarity – Correlogram – ACF and PACF – Augmented Dicky-Fuller test – Non-parametric PP test - differencing for stationarity –non-stationarity and spurious regression

Module 2: Advanced Time Series Econometrics

Sub Unit I: Level of integration of non-stationary variable - Co-integration analysis – Meaning of co-integration – Testing co-integration - Engel-Granger two-step procedure – Johansen - Juselius test procedure (Basic steps and concepts without derivation) – Trace and eigen value alternatives - Error Correction Mechanism and Vector Error Correction Mechanism (Basic steps and concepts without derivation) – VAR model – structure and uses.

Sub Unit II: AR model, MA model, ARMA model, ARIMA model – basic structure and uses - significance of lag selection – Akaike and Bayesian Information criteria –Basics of forecasting – Forecasting techniques in econometrics

Module 3: Volatility Modelling and Panel Data Analysis

Sub Unit I: Volatility analysis – ARCH and GARCH models –structure and estimation – Interpretation of ARCH and GARCH terms - Variance-Covariance Matrix - Volatility clustering/ volatility persistence – ARCH in Mean model - relevance of volatility modelling in financial market analysis

Sub Unit II: Introduction to panel data analysis – Assumptions - Basic structure - Estimation – Fixed effects model and random effects model

Module 4: Other advanced topics

Sub Unit I: Introduction to dimensionality reduction techniques - basics of Principal Component Analysis (PCA) – steps in obtaining principal components – covariance matrix-eigen vectors and eigen values

Sub Unit II: Basics of Factor Analysis (FA) – differences between PCA and FA - factors and variables – Latent variables - factor loading – Eigen values – Factor score – Criteria for determining number of factors – Rotation method – Explanatory and confirmatory factor analysis - Basics of simple linear discriminant analysis (Basic steps and uses only)

Module 5: Topics for Practical Learning (not for written examination)

Practical application of econometric techniques using free software – Importing spread sheets– Accessing sample data files and producing descriptive statistics - Fitting simple and multiple regressions – Regression diagnostics– Tests for Autocorrelation, heteroscedasticity and multicollinearity – Model adequacy tests - Testing stationarity of a time series observation using ADF test– Running co-integration using Engel -Granger procedure and interpreting the result. (The practical syllabus may be covered using either Gretl or R)

References

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CORE COURSE - 14: OPERATIONS RESEARCH FOR ECONOMIC ANALYSIS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
3	MAACO04C14	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- understand the fundamental concepts, principles, and techniques used in Operations Research, with a specific focus on their applications in economics.
- develop proficiency in using optimization techniques, such as the simplex method, transportation algorithm, and assignment algorithm, to find optimal solutions to economic problems.
- understand the concepts of game theory and its applications in economic scenarios, such as strategic decision-making and analyzing market behavior.
- learn network analysis methods, such as critical path analysis and network flow models, to optimize resource allocation and scheduling in economic projects.
- apply operation research techniques in current business practices and to make them draw inference based on the numerical results obtained.

Module-I

Sub Unit I: Introduction to Operations Research – History and development of OR-meaning, scope and applications - Modelling in Operations Research- OR models and their applications. Linear programming problems - formulation of problem- graphical solution- Simplex procedure for maximization and minimization-Duality concept-solution of dual problem- Economic interpretation of dual problems.

Sub Unit II: Non - linear programming – algebraic forms - constrained maxima and minima - Kuhn-Tucker analysis - Kuhn-Tucker conditions for solutions of non-linear programming problems- Quadratic programming - methods of solving quadratic programming.

Module II

Sub Unit I: Transportation Model – Mathematical formulation- general structure of the problem- transportation tables- methods to obtain Initial Basic Feasible Solution (IBFS)- NWCR, LCEM and VAM- conditions for testing optimality- MODI method for testing optimality solution of balanced and unbalanced problems.

Sub Unit II: Assignment Model – methods for solving assignment problems- balanced and

unbalanced assignment problems- maximization problems. Travelling Salesman Problem.

Module- III

Sub Unit I: Decision Theory – Introduction- basic concepts- pay off table- opportunity loss or regret table, decision rule - Decision making under certainty - Decision making under uncertainty (Laplace Criterion- Maximin - Minimax - Maximax principles - Hurwicz α criterion) Decision making under risk (Expected Opportunity Loss, Expected Monetary Value Criterion (EMV), Expected Value of Perfect Information (EVPI) - Bayesian decision theory - Decision tree.

Sub Unit II: Game theory – Introduction- meaning- Zero sum games- pay off matrix- minimax and maximin principle- Solution of two - person zero sum games - saddle point theorem- mixed strategies – solutions - algebraic method, dominance properties- optimal mixed strategies- graphical method and solution of games by LPP - $2 \times n$ and $m \times 2$ games - reducing the game problem to LPP- n-person games (concept).

Module- IV

Sub Unit I: Network Techniques – Basic concepts and construction of networks - CPM – basic concepts, critical path- event times- float and slack – PERT, time estimates, probability for project completion, difference between PERT and CPM

Sub Unit II: Cost consideration in PERT/ CPM – Time- Cost trade off analysis- resource allocation and scheduling- resource levelling, resource smoothing, project control, updating

References:

1. J. K Sharma (1997), Operations Research: Theory and Practices
2. William J. Baumol (1999), Economic Theory and Operations Analysis -Prentice Hall of India, New Delhi,
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CORE COURSE - 15: PROJECT

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
4	MAECO04C15	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to

- demonstrates ability to design and conduct independent research, including formulating research questions, selecting appropriate methodologies, and analysing data.
- improve the ability in analysing data, using appropriate statistical or qualitative methods, and drawing meaningful conclusions
- apply economic theories and concepts to real-world issues or problems, illustrating the practical relevance of economic knowledge.
- identify and address challenges or limitations encountered during the research process.
- contribute new insights, perspectives, or empirical evidence to the existing body of knowledge in the field of economics.

Project Guidelines

1. **Project Title:** A concise and informative title that reflects the main focus of their research.
2. **Research Question:** Develop a clear and well-defined research question that can be addressed within the scope of the project.
3. **Objectives:** Mention specific learning objectives aim to achieve through the research.
4. **Project Timeline:** Provide a timeline with deadlines for each stage of the project, including the proposal submission, data collection, analysis, and final report submission.
5. **Presentation of the Project Proposal:** Submit a research proposal present it in front of the fellow students and research guides, outlining their chosen topic, research question, objectives, methodology, and expected outcomes. The proposal should be approved by the guide and head of the department before proceeding with the project.
6. **Literature Review:** Explore existing literature related to their chosen topic to understand the relevant theories, empirical findings, and debates.

7. **Methodology:** Specify the data collection methods and analytical techniques used to answer their research question.
8. **Data Sources:** Use reliable sources for obtaining data relevant to the research question. Use reputable databases, government publications, academic journals, or primary surveys.
9. **Data Presentation:** Use effective ways to present the data, including the use of tables, graphs, and charts, to enhance clarity and visual appeal.
10. **Analysis and Interpretation:** Analyse the data and interpret the results in the context of the declared research question and research objectives.
11. **Results and Conclusion:** Present the findings clearly and concisely. The conclusion should provide a summary of the results and their implications for the research question.
12. **Writing Style and Citation:** Use APA writing style and citation format for the project report.
13. **Plagiarism:** Remind students about the importance of academic integrity and the consequences of plagiarism. Encourage proper citation of sources.
14. **Presentation of the final report:** The final project is presented in front of the fellow students and research guide and obtain feedback, support and suggestions.
15. **References:** A list of textbooks, academic journals, databases, and websites, that supported the students in their research.
16. **Submission of Final project:** A hard copy and a soft copy of the project report should be submitted to the Department.
17. **Evaluation Criteria and Rubric:** A panel of experts appointed by the university to evaluate the project report. It has both external and internal evaluation. (External evaluation 80 marks and internal evaluation 20 marks. The evaluation criteria and rubric are presented in the following table.

RUBRIC FOR THE PG PROJECT ASSESSMENT

The total 100 marks for the project are divided into two components

1. Internal Evaluation (20 marks)

Rubrics For Internal Evaluation		
	Components	Marks
1	Punctuality	4
2	Use of Data	4
3	Scheme/Organization of the Report	8
4	Viva Voce	4
	Total	20

2. External Evaluation (80 marks).

Rubrics For External Evaluation		
	Components	Marks
1	Relevance of the Topic	4
2	Statement of the Objectives	8
3	Methodology/Reference/Bibliography	12
4	Presentation of facts/figures/language Styles/diagrams etc.	16
5	Quality of Analysis/Use of Statistical Tools	12
6	Findings and Conclusion	8
4	Viva Voce	20
	Total	80

Total for Project Course

100 marks

PART B: SYLLABUS – ELECTIVE COURSES

ELECTIVE COURSE - 1: DEVELOPMENT OF ECONOMIC IDEAS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
4	MAACO03E01	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to

- gain insights into the historical progression of economic ideas, from Ancient through the Classical, Neoclassical, Keynesian, and modern economic theories.
- able to analyse how economic theories have addressed the economic challenges and societal issues of their time.
- compare and contrast various traditions and schools of economics in a global perspective, which influenced to change the world in its current state.
- evaluate critically the main trends of modern economics, competently lead a discussion about the arguments in favour of each of them.
- appreciate the cultural and philosophical influences on economic thought, including the relationship between economics and ethics, politics, and social norms.

Module 1: Introduction -Ancient and Medieval Economic Thinking.

Sub Unit I: History of Economic Thought as a discipline — A very brief introduction to Epistemology, Methodology and the Philosophy of science – Ancient Economic Thought: Egypt, China, India, Greece, the Hebrews, Rome. – Medieval Economic Thinking: St. Thomas Aquinas and the scholastic thought, Arab - Islamic contributions.

Sub Unit II: Mercantilism and Cameralism: The development of the international market and the policy of the nation-states, Major ideas of mercantilists, Mercantilists theory and practice- William Petty, John Locke, Sir Josiah Child. Physiocracy and Physiocratic doctrines: Natural Order, Net Product, Quesnay's Tableau Economique, Contribution of Turgot.

Module II: The Classical School and the Economic Science

Sub Unit I: Adam Smith: His life and time, Smith's moral philosophy, "The Smith's Problem", Naturalism and Optimism, Division of labour, Theory of value and distribution, Canons of taxation, Productive and Unproductive labour, Theory of Capital accumulation and economic development, Stationery state, Free trade, Economic liberalism.

Sub Unit II: David Ricardo: Ricardian methodology, Theory of value and distribution, Stationery state, Foreign trade theory and Corn Laws, Technological Change, Theory of economic development. T R Malthus: Economics 'a dismal science', Theory of population,

Theory of market glut. J B Say: Law of Market, 'Say's Law' vs Under-Consumption Theories (Malthus, Sismondi). Bentham's Utilitarianism. J S Mill: Socialist Programme. Von Thunen: Views on Price and Distribution.

Module III: Critics of Classical School

Sub Unit I: The Nationalist critics: Muller, Frederich List. Historical Critics: German Historical Critics-Romanticism and Conservatism-William Roscher, Gustav Schmoller, British Historical Critics-Walter Bagehot. Socialist Critics: St. Simon, Sismondi, Robert Owen, Charles Fourier, Louis Blanc, Joseph Proudhon.

Sub Unit II: Scientific Socialists: Karl Marx- Materialistic Interpretation of History, Dialectical Materialism, Theory of Surplus Value, Theory of Economic Development, Fredric Engels, Karl Kautsky, Rosa Luxemburg, Rudolf Hilferding, Y I Lenin.

Module IV: Modern Economic Thought.

Sub Unit I: Neo-Classical School: Subjective School; Karl Menger, Von Wieser, Bohm Bawerk. Marginal Revolution: Jevons, Walras, Menger. Mathematical School (Lausanne School): Leon Walras, Vilfredo Pareto. Alfred Marshall and Neo-Classicism, A C Pigou, Irving Fisher. Swedish School: Knut Wickseell, Wicksteed.

Sub Unit II: Institutionalism: Thorstein Veblen, J R Commons, W C Mitchell. J M Keynes, Post Keynesians, Milton Friedman. Development of Heterodox Economics. Economic Ideas of Indian Scholars: Contributions of Dadabai Naoroji, M. G. Ranade, Mahatma Gandhi, Ambedkar, Bhagavathi and Amartyasen.

References:

1. Eric Roll, A History of Economic Thought.
2. L. Hanley, History of Economic thought.
3. J. P. Bell, A History of Economic Thought.
4. Y. A. Schumpeter, A History of Economic Analysis.
5. O.H. Taylor, A History Economic Thought.
6. Robert Lekachman. A, History of Economic Ideas.
7. Alexander Gray, Development of Economic Doctrines.
8. F. Whittaker, School and Streams Of Economic Thought
9. Karl Marx, Theory of Surplus value (3 Volumes).
10. Blaug, Mark, Economic Theory in Retrospect, Cambridge University Press
11. Rothbard, Murray. N, Economic Thought Before Adam Smith (Volume-I and II), Edward Elgar Publishers
12. Dasgupta, Ajit K, A History of Indian Economic Thought, Routledge; London

**ELECTIVE COURSE - 2: RESEARCH METHODOLOGY AND DATA
ANALYSIS**

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
4	MAACO03E02	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to

- understand the process of formulating research questions and hypotheses, selecting appropriate research designs, and identifying the most suitable methodology.
- familiarize with different data collection techniques commonly used in economics, such as surveys, experiments, archival data, and interviews.
- understand the ethical considerations in economic research, including privacy, confidentiality, and the responsible use of data.
- learn to identify and access relevant data sources, including primary and secondary data, economic databases, government reports, and academic literature.
- learn to conduct a comprehensive literature review, critically evaluating existing studies, and identifying research gaps.
- create a well-structured research proposal, including the justification for the research, research objectives, methodology, and expected contributions.

Module 1: Introduction to Social Science Research

Sub Unit I: Understanding the Science - Rationalism, Empiricism: Positive Science, Difficulties of Positive Science, Methodological Holism in Objectivist Social Science-Functionalism and 'Social Facts', Subjectivist Approaches – Methodological Holism, Methodological Individualism; Perennial Debates in social science- Explanation and Understanding: Reconciliation, Fact vs. Values in Social Research, Rationality vs. Relativism.

Sub Unit II: Research methodology fundamentals: The relation between theory and research – Research methods vs Methodology. Types of research – Applied vs. Fundamental; Descriptive vs. Analytical; Quantitative vs. Qualitative; conceptual vs. Empirical. Scientific and Social Science research – Approaches in social science research.

Module II: Tools for Research

Sub Unit I: Research design: Basic principles of research design-Types of research designs (experimental, quasi-experimental, correlational, survey etc.)-Sampling techniques and sample size determination- Quantitative method-qualitative methods- Mixed method approach.

Sub Unit II: Fundamentals of data and analysis: Data collection tools and techniques -Validity and reliability of measurement tools- Handling Data- Understanding economic data-Data management - Levels of measurement (nominal, ordinal, interval and ratio) - Data analysis techniques – Univariate - bivariate and multivariate analysis- Data analytics with MS Excel-

Building functions in Excel- Data analytics with SPSS and Gretl

Module III: Research Process

Sub Unit I: Research proposal development: Structure of research proposal- Introduction, Review of Related Literature, The Problem, Objectives, Hypotheses, data and Methodology, Scope, Tentative Chapterisation, Limitations. Components of a research proposal- formulating research objectives and research questions- Literature view -Need, scope, use and precaution – gap in literature review - Developing of working hypothesis.

Sub Unit II: Reporting writing: Structure and components of scientific reports - Types of report – Technical reports and thesis – Different steps in the preparation – Layout, structure and Language of reports – Illustrations and tables - Bibliography, referencing and footnotes.

Module IV: Ethics in Research

Sub Unit I: Research Ethics: Ethics with respect to research- intellectual honest and research integrity- scientific misconduct: falsification, fabrication, and plagiarism-selective reporting and misinterpretation of data-Use of plagiarism software like Turnitin, Urkund and other open-source software tools.

Sub Unit II: Publication ethics: Introduction and importance-best practices- Conflicts of interest-Publication misconduct: Concept-Violation of publication ethics, Authorship and contributorship -Identification of publication misconduct- Credibility of journals: predatory publishers and journals - UGC Care List: Concept and scope - Web of Science Index: Arts and Humanities Index, Social Science Citation Index - Scopus Index

Reference

1. Friedman, M. (1953), 'The Methodology of Positive Economics'. In Essays in Positive Economics. Chicago: University of Chicago Press.
2. Health, Joseph 2014. 'Methodological Individualism'. The Stanford Encyclopedia of Philosophy. Available at: <http://plato.stanford.edu/archives/fall2014/entries/methodological-individualism>
3. M R.P. Dore, "Function and Cause, Sociological Review, Reprinted in M. Martinand L.C. McIntyre, eds. Readings in the Philosophy of Social Sciences, Cambridge,1994.
4. Samuelson, P. (1963) 'Problems of Methodology: A Discussion', American Economic Review, vol. 52, pp.232-36.
5. Sen, A.K. (1977)'Rational Fools', Philosophy and Public Affairs, 6, pp.317-44.
6. Wallerstein (1996) 'Open the Social Sciences: Report of the Gulbenkian Commission on the Restructuring of the Social Sciences', Vistaar, NewDelhi.
7. Weber (1949), The Methodology of the Social Sciences, NewYork: Macmillan.
8. Ghosh B N (1984). Scientific Method and Social Research. Ed.2. Delhi: Sterling.
9. Ranjit Kumar (1999). Research Methodology: A Step- By- Step Guide for Beginners.
10. <https://ugccare.unipune.ac.in/>

ELECTIVE COURSE - 3: POPULATION STUDIES

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
4	MAACO03E03	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to

- understand the basic demographic concepts used in population studies, such as birth rates, death rates, migration rates, population growth, and population composition.
- analyse the historical and current population trends in India and Kerala, including population size, growth rates, age distribution, and urbanization patterns.
- examine the cultural, social, and economic factors influencing fertility rates in India and its impact on family planning programs.
- analyse the patterns and trends of internal and international migration in India and Kerala, and explore the socio-economic implications of migration.
- evaluate the population policies and programs implemented in India to address demographic challenges, including population control and family welfare initiatives.
- Comprehend the demographic transition theory and its relevance to India and Kerala's demographic changes over time.
- Analyse the relationship between gender dynamics and population processes, including the status of women, gender-based disparities, and their implications.
- understand the policy implications of demographic trends in India and Kerala, including planning for healthcare, education, employment, and social welfare.

Module-1 An Introduction to Population studies

Sub Unit I: Population studies- Meaning, Nature, scope, importance and basic concepts- Population data: sources and methods- World population growth and its distribution- Population growth in India and Kerala- Structure and characteristics of Indian population- Sex and Age structure- Marital status- Literacy Rate- Life Expectancy Index- - Population ageing in India and Kerala- Emerging Issues: Gender issues and development- Human development and Millenium development goals.

Sub Unit II: Theories of Population growth- Karl Marx's theory- Malthusian- Optimum and Demographic Transition Theories- Theories of Population: Views of C.P Blaker and Boscrup- Biological theories of Population- Socio economic theories of population; Views of Marx and Libenstien.

Module II Population Dynamics

Sub Unit I: Mortality- Measures of mortality- Use of Life Table Techniques- Sex and Age pattern of Mortality- Mortality differentials- Level and trends in Mortality- Fertility: Level and trends-Nature of Fertility- Measures- Differentials in fertility.

Sub Unit II: Theories of fertility- Nuptiality; Marital status- Mean age at marriage- Widowed and Divorce- Population trends in modern economic growth- Mass education and fertility decline.

Module III Migration and Urbanisation

Sub Unit I: Migration- Concepts- Importance- Types of Migration- Migration Differentials- Levels and trends of Migration- Socio economic aspects of Migration- Theories of Migration- Techniques of Measurement of migration.

Sub Unit II: Urbanisation- Distribution and trends in urban population- Measures- Factors affecting Urbanisation.

Module IV Population Projection

Sub Unit I: Population projection and Estimation- Methods and Importance of Population projections- Population projection and population policies in India- Uses of population data in development planning

Sub Unit II: Population problem- Population policies and programmes in India- Family planning and family welfare- Population growth: conceptual issues and linkage with socio-economic development, environment, health and poverty.

References

1. Asha A Bhande & Tara Kanikkar (1988) Population Studies, Himalaya Publishing House.
2. Prasad. P. K (1990) Population Planning: Policy and Programmes, Deep and Deep Publications, New Delhi.
3. Colin Neuwel (1998) Methods and Models in Demography, Belhaven Press, London.
4. Peter and Cox (1989) Demography, Universal Book Stall, New Delhi.
5. D. J. Bogue (1971) Principles of Demography, Wiley.
6. Samuel H Preston, Patrick Heuveling and Michel Guillot (2001) Demography; Measuring and Modelling Population Processes. U.K and U.S.A, Black well Publishers.
7. R.D Misra (1980) An Introduction to the Study of Population, South Asian Publishers
8. Rajendra K. Sharma (2007) Demography and Population Problems, Atlantic Publishers

ELECTIVE COURSE - 4: ECONOMICS OF GROWTH AND DEVELOPMENT

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
4	MAACO03E04	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to

- get clarity on the various dimensions of development and to identify the strategic factors in the development of developing countries.
- understand the basic concepts in economic growth and economic development and It provides some measurement tools and that will help the students to identify and evaluate the present scenarios.
- identify the development issues and also the basic requirements for economic development of underdeveloped and developing countries.
- learn the basic ideologies through various theories and to improve the critical thinking.
- understand the theory and empirics of Development Economics with special reference to less developed countries.
- provide an understanding about the various development issues and the development gap between policy and practice.

Module I: Concepts and Measurement of Economic Growth and Development

Sub Unit I: Concepts of growth and development-dimensions of development gap: Human Development Index- Human Poverty Index/ Deprivation Index- Multi-dimensional Poverty Index- Gender related Development Index-- Gender Empowerment Measure (GEM)(Definition and calculation)-Genuine Progress Indicator Index (GPI)-Gross Domestic (National) Happiness Index (GDH).

Sub Unit II: Sen's Entitlement and Capability Approach-Development as freedom-Basic needs approach. Inequality and development- Kuznet's characteristics- -Kuznet's Inverted U Hypothesis-Measures of inequality: Lorenz Curve- Gini-Co-efficient- Atkinson Index, Theil Index, Palma ratio, Piketty's concept of Inequality.

Module-II: Theories of Economic Growth

Sub Unit I: Harrod- Domar Model, Neo-classical growth models; Solow-Swan growth models and its extension: Ramsey growth model (Ramsey-Cass-Koopmans model). Empirics of Solow growth theory: conditional and unconditional convergence. Cambridge growth models: Joan Robinson Model (Golden Age Model) ,Nicholas Kaldor growth model.

Sub Unit II: Endogenous growth theory: Romer model with knowledge spillovers and increasing returns to scale, AK model, Uzava-Lucas model with human capital, models with endogenous technical change, R&D based growth theory. Indian Plan Models: Mahalanobis and Wage-goods model (Brahmananda and Vakil)

Module III: Theories of Economic Development

Sub Unit I: Dualistic development and process of structural transformation: Concept of dualism-Technological, Social, Geographical and Financial, Myrdal Circular Cumulative Causation-backwash and spread effect, International inequality – Centre-Periphery Thesis– regional growth differences

Sub Unit II: Theory of balanced growth and unbalanced growth, Lewis theory of unlimited supplies of labour, Fei and Ranis dual economy model, Migration and development- Todaro model.

Module IV: Dependency and Underdevelopment

Sub Unit I: Dependency theory and underdevelopment: Emanuel theory of unequal exchange, Dos Santos dependency theory, Samir Amin unequal development, Neo-Marxist approach of Gundar Frank and Paul Baran, World Systems Theory of Emmanuel Wallerstein, basic principles of Neo Liberalism.

Sub Unit II: Role of technology in development-Choice of techniques -Significance of capital saving and labour saving techniques- role of Intermediate technology- issues related to transfer of technology.

References/Essential Reading

1. Thirlwall, A. P :Growth and Development with Special Reference to Developing Economies, Palgrave Macmillan (2009).
2. Todaro M.P: Economic Development in the Third World. (4th Edition 1991) Longman, Singapore.
3. Ray Debraj: Development Economics, Oxford, University Press (2014)
4. Todaro, M.P. and S.C. Smith: Economic Development (Tenth Edition 2015), Pearson
5. D. Mookherjee and D. Ray: Readings in the Theory of Economic Development (2001), Blackwell publishers
6. Amartya Sen: Development as Freedom. New Delhi: Oxford University Press (1999)
7. J.N. Bhagwati (Ed): Dependence and Interdependence- Essays in Development Economics. Vol-1&2, Bombay: OUP (1985)

8. Bakul H Dholakya and Raveendra H Dholakya. 1998. Theory of Economic Growth and Technical Progress- An Introduction. Delhi: MacMillian
9. Hywel G. Jones. An Introduction to Modern Theories of Economic Growth (1976) McGraw Hill.
10. Ghatak, Subrata: Introduction to Development Economics. Routledge (4th edn. 2003)
11. Higgins, Benjamin (1976): Principles of Economic Development, Universal Book Stall, New Delhi.
12. Kuznets S (1972): Modern Economic Growth, Oxford and IBH, New Delhi.
13. Hollis, Chenery, and T. N. Srinivasan. "Handbook of Development Economics, Vol. 1.(1988).
14. Desai, Vandana and R.B.Potter.2014. The Companion to Development Studies (Ed)
15. Kuznets, Simon. Economic Growth and Income Inequality. The American Economic Leeson and Minogue. (Eds.) 1988.Perspectives on Development. Routledge.London
16. Samir Amin: Unequal Development An Essay on the Social Formations of Peripheral Capitalism ,Translated by Brian Pearce.
17. Gunnar Myrdal.1968. Asian Drama: An Inquiry In to the Poverty of Nations. II Vol. New York: Pantheon
18. Gerald M Meier and James E Rench (Ed).2005 Leading Issues in Economic Development.8th Edition
19. Kindleberger, C.P (1958) 'Economic Development', Tata McGraw-Hill,
20. M.L.Taneja and R.M.Mayer: Economics of Development and Planning,Vishal Publishing Co.Jalandhar-Delhi.
21. R.K.Lekhi and Joginder Singh: The Economics of Development and Planning, Kalyani Publishers.
22. UNDP: Human Development Reports.
23. World Bank Development Reports for various years.

ELECTIVE COURSE - 5: HETERODOX ECONOMICS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
4	MAACO04E05	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to

- compare and contrast different heterodox economic thoughts, such as Marxist economics, post-Keynesian economics, Institutional economics, Feminist economics, and Ecological economics.
- learn to critically evaluate the assumptions, methodologies, limitations and policy implications of mainstream economics, particularly of neoclassical economic theories.
- explore the historical context and development of heterodox economic theories, gaining insights into their evolution and their responses to prevailing economic challenges.
- familiarize alternative economic models and frameworks, such as the Marxian theory of labor value, the post-Keynesian theory of effective demand, and the Institutional theory of institutions and power.
- recognize the importance of pluralism in economic thinking, embracing diverse perspectives to enrich their understanding of complex economic phenomena.
- engage in discussions and debates on the merits and shortcomings of heterodox economic theories, fostering critical thinking and academic discourse.

Module 1: What is heterodox economics?

Sub Unit I: Multiple heterodox schools of thought in economics - critique of mainstream/neoclassical economics – Main currents in heterodox economics – Classical-Sraffian economics and post-Keynesian economics – Relation between the economics of Sraffa and Marx – Different notions of competition in mainstream and heterodox economics

Sub Unit II: Historical openness – Anthropological embeddedness – Path-dependence – Ecological issues – Historical inequalities associated with caste and gender – Markets and the state as engineered institutions – Surplus approach to value and distribution – Heterodox economics as offering coherent alternative theoretical frameworks to mainstream economics

Module 2: Heterodox theories of value & distribution

Sub Unit I: The need for value theory – Evolution of value concept in economics – Views by different schools - Link between value theory and income distribution theory – Marxian theory of value/price – Labour theory of value

Sub Unit II: Post Keynesian theory of price – Mark-up pricing – Classical-Sraffian theory of value – Production of commodities by means of commodities – Value through exogenous distribution – Customary wages – Monetary determination of interest rate

Module 3: Heterodox theories of output & growth

Sub Unit I: Critique of marginalist theory of output – Alternative theory of saving and investment – Kalecki’s and Keynes’s principle of effective demand – Extending the principle of effective demand to the long run – Sraffian extension – Sraffian super multiplier

Sub Unit II: Kaleckian extension – Functional finance – Modern Monetary Theory – Demand-led growth theory – Autonomous and induced elements of aggregate demand – Critique of supply-side growth theory – Heterodox view of public debt

Module 4: Heterodox theories of money

Sub Unit I: Money as institutions and norms – Money and liquidity – Critique of exogenous money – Loans create deposits – Endogenous money – Interest-setting monetary policy – non-neutrality of money

Sub Unit II: Critique of Quantity Theory of Money (QTM) – Money and interest rates – monetary policy – Heterodox theory of inflation

References

1. Aspromourgos, T. (2013). Sraffa’s System in Relation to Some Main Currents in Unorthodox Economics. In: Levrero, E.S., Palumbo, A., Stirati, A. (eds) *Sraffa and the Reconstruction of Economic Theory: Volume Three*. Palgrave Macmillan, London. https://doi.org/10.1057/9781137314048_2
2. Bharadwaj, K. (1978), *Classical Political Economy and Rise to Dominance of Supply and Demand Theories*.
3. Eatwell, John (1982), “Competition”, in Bradley and Howard (eds.), *Classical and Marxian Political Economy*.
4. Lavoie, M. (2022), *Post-Keynesian Economics: New Foundations*, Edward Elgar.
5. Lee, F. (1999), *Post Keynesian Price Theory* (Modern Cambridge Economics Series). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511492471
6. Nicholas, H. (2011). Marx’s Theory of Price — Capitalist Commodity Production. In: *Marx’s Theory of Price and its Modern Rivals*. Palgrave Macmillan, London. https://doi.org/10.1057/9780230346505_3
7. Thomas, A. M. (2021), *Macroeconomics: An Introduction*, Cambridge: Cambridge University Press.

ELECTIVE COURSE - 6: AGRICULTURAL ECONOMICS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
4	MAACO04E06	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to

- understand the principles and theories of agricultural economics and their relevance to the agricultural sector.
- analyse the determinants of agricultural supply and demand, and their impact on agricultural markets.
- evaluate the role of government policies and interventions in shaping agricultural markets and trade.
- Identify emerging issues and challenges in the agricultural development in India and Kerala and evaluate the agricultural policies of the state and central governments in the light of these issues.

Module-1 An Introduction to Agricultural Economics

Sub Unit I: Nature and Scope of Agricultural Economics- Role of Agriculture in economic development- Inter relationship between agriculture and Industry- Terms of trade between agriculture and Industry.

Sub Unit II: Theories of Agricultural Development: Schultz, Mellor, Boserup and Fei-Ranis.

Module II Agricultural Development in India

Sub Unit I: Agricultural Policies since independence- Institutional and technological changes in Indian agriculture- Impact of agricultural development on economic development- Second Green Revolution- Evergreen Revolution.

Sub Unit II: Organic farming- Problems of agricultural Development- National Commission on farmers- Recent policy frame work in Indian agriculture- Impact of WTO agreement on Indian agriculture- Trade liberalisation and Agricultural Exports- Globalisation and Indian agriculture.

Module III Agricultural Production Economics

Sub Unit I: Economic decision in Agricultural Production- Production function in Agriculture and forms of agricultural production function- Resource use and efficiency- Demand and Supply of Agricultural Products- Characteristics of demand and supply- Cobb-web theorem- Agricultural Prices- Agricultural Price Policy and Food Security in India.

Sub Unit II: Agricultural Marketing- Market structure and Imperfections- Regulated markets-

Marketed and Marketable surplus- Systems of agricultural marketing in India- Future Trading- Risk and uncertainty in Agriculture- Crop Insurance- Systems and types of farming- Agricultural Subsidies- Agricultural Credit- Structure and Problems of Agricultural credit.

Module IV Kerala Agriculture

Sub Unit I: Agricultural Performance of Kerala- Trends in Agricultural Growth- Changes in cropping pattern- Land use pattern.

Sub Unit II: Land reforms- Lease land farming- Group farming- Organic farming- Emerging Issues and prospects of Agriculture in Kerala

References:

1. R.K Lekhi and Joginder Singh (2015) Agricultural Economics- An Indian Perspective, Kallyani Publishers.
2. R.Desai (2013) Agricultural Economics, Himalaya Publishing House.
3. Uma Kapila (2005) Understanding the Problems of Indian Economy, Academic Foundations.
4. W.A Lewis (1954) Economic Development with Unlimited Supply of Labour.
5. Boserup. E (1993) Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure, Routledge.
6. O.S Srivastava (2010) Theoretical Issues of Agricultural Economics, Anmol Publications.
7. A. Rudra (1982), Indian Agricultural Economics-Myths and Realities, New Delhi.
8. Anwarul Hoda (2001) WTO Agreement in Indian Agriculture, New Delhi.
9. E.O Heady (1961) Economics of Agricultural Production and Resource Use, Prentice Hall.
10. S.A.R Bilgami (2017) An Introduction to Agricultural Economics, Himalaya.
11. C.A Robertson (1977) An Introduction to Agricultural Production Economics and Farm Management.
12. M.A Oommen (1999) Rethinking Development, Kerala's Development Experience.
13. P.P Pillai (1994) Kerala Economy, Four Decades of Development, John Mathai Foundation, Trissur.
14. Mathew Kurian and Rajan John (ed) (2014) Kerala Economy and its Emerging Issues, National Book Stall, Thiruvananthapuram.
15. State Planning Board, Economic Review, Various years, Thiruvananthapuram.
16. R. Sthanumoorthy (ed) (2006) Kerala Economy; Achievement and Challenges, ICFAI, University Press, New Delhi.
17. Rajasenar. D and Gerard De Groot (ed) (2005), Kerala Economy, Trajectories, Challenges and Implications, CUSAT, Kochi.
18. G.S Bhalla (1995) Globalisation and Agricultural Policy in India, Indian Journal of Agricultural Economics, Vol.50, No.1 January-March.
19. C.H Hanumantha Rao (1995)(Liberalisation of Agriculture in India, Indian Journal of Agricultural Research, Vol.50, No.3, July-September.

ELECTIVE COURSE - 7: INTERNATIONAL TRADE THEORIES AND POLICIES

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
3	MAACO04E07	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to

At the end of the course, the students are able to:

- evaluate the contributions of trade theories in explaining the patterns and gains from trade.
- develop an understanding of the functioning of the international trading apparatus.
- help to understand the functioning of the international monetary and financial system.
- analyse the recent developments in the field of international economics.
- analyse different exchange rate systems; fixed exchange rates, floating exchange rates, and managed floating; and understand their advantages and disadvantages.
- evaluate the effects of different exchange rate regimes on currency stability and international trade.
- study the role of the international monetary system in influencing global imbalances and currency stability.

Module 1: Classical and Neoclassical Trade theories & Market

Sub Unit I: Theories of Absolute advantage and comparative advantage- gains from trade – Terms of trade and trade multiplier-- Opportunity cost approach- Heckscher-Ohlin model- factor endowments- relationship between factor and commodity prices- Specific factor model- Specific factors and income distribution- Empirical evidence on H-O model - the Leontief Paradox.

Sub Unit II: Stolper-Samuelson Theorem-Rybezynsky Theory-Immiserising growth theory- demand and supply-Reciprocal demand theory- offer curve-International trade under imperfect competition- Monopolistic competition and trade -Intra industry trade - Measuring and models- trade and welfare.

Module II Modern trade theories & policies

Sub Unit I: Kravis-Linder theory-Technology gap theory-product cycle theory-Kemp Model- Krugman model- country similarity trade-global strategic rivalry theory-Porter's National competitive advantage theory.

Sub Unit II: The case for free trade - policies - negotiations - GATT, Tokyo and Uruguay rounds - Customs union - Trade restrictions – tariffs and non-tariff - partial and general equilibrium analysis of tariffs- theory of tariff structure - optimum tariff - quotas and other non-

tariff barriers – dumping-Protectionism and effective rate of protectionism-general equilibrium analysis-small country and large country cases – optimum tariff-Metzler Paradox.-Lerner symmetry theory.

Module III- Foreign Exchange & Balance of payment & Foreign Exchange

Sub Unit I: Balance of payment accounting-disequilibrium in international transactions-corrective measures-theories of balance of payment disequilibrium-elasticity, absorption, and monetary approaches-internal and external balance-assignment problem -Swan model.

Sub Unit II: Foreign exchange market-characteristics, functions, and participants- Types of transaction; financial instruments-arbitrage, spot rate, forward rate, futures, options, swap-determination of foreign exchange rate-purchasing power parity, asset price theory, portfolio balance approach-fixed and flexible exchange rate system-foreign exchange risks-hedging and speculation-Devaluation and Revaluation.

Module IV-International Monetary systems & Economic integration

Sub Unit I: Importance of international finance-international monetary system-IMF, IBRD, GATT, WTO and regional trade blocks-liquidity issues-international capital movements-FDI and FPI-advantages and disadvantages of transnational corporation.

Sub Unit II: Theory of regional economic co-operation-Forms of economic integration-static and dynamic effects of free trade area-common market, European Union-preferential trade agreements-UNCTAD,NIEO, SAARC, NAFTA-G-20 Countries.

References:

1. Kindleberger, C. P, "International Economics " R.D.Irwin, Homewood
2. Domenic Salvatore, (1998), International Economics, Wiley India Pvt. Ltd
3. Tri-Dung Lam-A Review of Modern International Trade Theories, American Journal of Economics, Finance and Management Vol. 1, No. 6, 2015, pp. 604-614
4. Kravis I. B. (1956) – "Availability & Other Influences on the Commodities Composition of Trade"– Journal of Political Economy, Vol. LXIV, April, pp. 143 – 155.
5. Varun Chotia and NVM Rao -Investigating the Landscape of India's BOPs: Cointegration and Causality Analysis, International Journal of Statistics and Economics.
6. J. Bhagwati Indian Balance of Payments Policy and Exchange Auctions- OUP.
7. BO Sodersten and Geoffrey Reed ,(2008)International Economics, Macmillan
8. Paul. R. Krugman and Maurice Obstfeld , International Economics ,Pearson Education (2009), Doring Kindersley India Pvt. Ltd.
9. O.S. Srivastava , ,(2007),International Finance, Kalyani Publishers, New Delhi
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11. P.K. Jain. et al, (2013), International Financial Management, MacMillan, New Delhi
12. Bhagavati, J.N (Ed) (1987), International trade; Selected readings, MITpress
13. Francis Cherunilam, (2008), International Economics, Mc Graw-Hill Education

ELECTIVE COURSE - 8: BUSINESS ECONOMICS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
4	MAACO04E08	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

- understand fundamental economic principles, concepts, and theories, and their application in the context of business operations and decision-making.
- analyse the behaviour of firms, including their cost structures, revenue generation, and profit maximization strategies.
- evaluate the factors driving demand and supply in the market and use this knowledge to make informed business decisions.
- recognize the impact of macroeconomic factors, such as GDP, inflation, interest rates, and exchange rates, on business environments and performance.

Module I: Introduction to Business Economics and Economic Tools

Sub Unit I: Introduction to Business Economics-Nature and Scope and Characteristics-Integration of Economic theory and Business Practices-Types of Business Economics.

Sub Unit II: Economic Tools in Business Economics-Opportunity Cost, Time Value of Money, Marginalism, Incrementalism, & Discounting Principle- The Theory of Firm and theory of Business Economics-Role and Responsibilities of a Business Economist.

Module II: Methods of Demand Forecasting & Cost Analysis

Sub Unit I: Demand forecasting-Meaning-Types of Demand Forecasting-Surveys of Buyer's Intention, Sales Force Composite Method, Trend Projection, Executive Judgement Method, Statistical methods.

Sub Unit II: Introduction on Cost Analysis- Actual Costs and Opportunity Costs- Explicit and Implicit Costs -Accounting Costs and Economic Costs- Direct Costs and Indirect Costs - Total Cost, Average Cost and Marginal Cost - Fixed and Variable Costs - Short-Run and Long-Run Costs.

Module III: Business Finance and Accountancy

Sub Unit I: Scope and Functions of Business Finance-Sources of Business Finance-Types of Business Finance-Principles of Business Finance-Principle of Risk and Returns, Cash Flow, Profitability and Liquidity, Diversity, Hedging principle, and Principle of Business Cycle.

Sub Unit II: Basic concepts of accountancy- single entry and double entry system, bond allocation, business statistic tools, and implementation. Types of accounting concept-business entity concept, Going Concern Concept, Money Measurement Concept, Cost concept, Accounting Period concept.

Module IV: Legal Environment and Business

Sub Unit I: Legal Environment-Nature-Importance, Types, role of legal environment in Business-different factors of Legal Environment of Business. Kinds of Contracts, The Sale of Goods Act, the Indian Companies Act, Business Ethics-Business-Government and Society.

Sub Unit II: Macroeconomic indicators and business cycles – Fiscal and monetary policies and their impact on businesses – Antitrust laws and regulations affecting business behaviour – Global economic trends and implications for businesses.

Reference

1. RL arshney and KL Maheswari, Managerial Economics, 18th Revised Edition, 2004
2. John Solman and Mark Sutcliffe, Economics for Business, 2006
3. Dr. V. C. Sinha, Dr. Ritika Sinha, (2022) , Business Environment
4. Misra & Puri, Economic Environment of Business
5. D.S. Rawat, Deepti Maheswari, Students Guide to Accounting Standards.

ELECTIVE COURSE - 9: POLITICAL ECONOMY

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
4	MAACO04E09	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to

- analyse and critically evaluate key theories and concepts in political economy.
- understand the role of political institutions and ideologies in shaping economic policies and outcomes.
- examine the dynamics of power, interests, and economic distribution within various economic systems.
- assess the impact of globalization and international political economy on India's economy.
- apply political economy frameworks to real-world policy analysis and case studies.
- develop research and analytical skills to conduct independent studies in political economy

Module-1 An Introduction to Political Economy

Definition and scope of Political Economy – The interdisciplinary nature of political economy
- An introduction of Classical Political Economy- Historical Developments and major Thinkers (Adam Smith, David Ricardo, and Karl Marx) – Criticisms of Classical Political Economy.

Module II - Heterodox Approaches to Political Economy

Sub Unit I: German Historical Approach – Institutional Approach – Marginal Revolution

Sub Unit II: Marxian Political Economy: Commodity, Prices, Class, Property, Surplus Value, Profit and Accumulation.

Module III – Developments in 20th century.

Sub Unit I: Keynesian Political Economy- Economic Approach to Politics- Political Economy of Power, State and Justice. Neoclassical economics and rational choice theory.

Sub Unit II: Neoliberalism- Capital Crisis- Role of Finance Capital- Financialization

Module IV: Political Ideologies and Economic Policies

Sub Unit I: Liberalism, conservatism, socialism, and their economic implications – Political economy of welfare states and social safety nets – Impact of political ideologies on trade and globalization.

Sub Unit II: Globalization and International Political Economy – The rise of global trade and finance – The politics of global economic institutions (e.g., WTO, IMF, World Bank) – Political economy of multinational corporations and foreign direct investment.

References:

1. Ben Fine & Dimitris Milonakis (2009), From Political Economy to Economics, Module 1-4
2. James A Caparoso & David P Levine (1992), Theories of Political Economy, Introduction and Module 1 and 2Mourice Dobb (2010) Theories of Value and Distribution since Adam Smith: Ideology and Economic Theory.
3. Immanuel Wallerstein (1974) The Rise and Future Demise of the World Capitalist System: Concepts for comparative Analysis.
4. Keith Tribe (1981) Genealogies of Capitalism, The Macmillan Press.
5. Milton Friedman (1962) Capitalism and Freedom, pp. 1-55 and 108-137 and 160 to 190.
6. Allen Drazen (1009) Political Economy of Macroeconomics, URL.
7. David Harvey (2005) A Brief History of Neoliberalism.
8. Rodd Hill & Tony Myatt (2010) The Economic Anti Text Book, A Critical Thinkers Guide to Macroeconomics, URL.
9. Immanuel Wallerstein (1974), The Rise and Future Demise of the World Capitalist System, Concepts for Comparative Analysis.
10. Joseph Schumpeter (1942), Capitalism, Socialism and Democracy
11. Samir Amin (1970) Accumulation on a World Scale.
12. David Harvey (2001) Spaces of Capital towards a Critical Geography.

ELECTIVE COURSE - 10: FINANCIAL ECONOMICS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
4	MAACO04E10	5	4	3

COURSE OUTCOMES:

At the end of the course, the students will be able to;

- grasp the structure and functioning of financial markets, including money markets, capital markets, and derivative markets.
- compare different financial instruments, such as stocks, bonds, derivatives, and commodities.
- evaluate investment decisions using principles of risk and return, portfolio diversification, and asset allocation.
- familiar with the roles and functions of financial institutions, such as banks, insurance companies, and investment firms, in the economy.
- understand the relationship between financial markets and macroeconomic factors, such as interest rates, inflation, and economic growth.

Module I: Introduction to Financial Economics

Sub Unit I: Overview of financial economics and its importance in modern economies – Types of financial markets: money markets, capital markets, and derivative markets – Fundamental concepts in finance: time value of money, risk and return – Computation of return.

Sub Unit II: Types of risk: (Systematic risk, Market risk, purchasing power risk, Interest rate risk, Unsystematic risk, Business risk (Internal, External), Financial risk) – Minimising risk Exposure – Measuring risk: standard deviation, beta, and other risk measures.

Module II: Investment and Securities

Sub Unit I: Meaning of investment – speculation and Gambling – Investment avenues - Types of investors – Investment objectives – The investment process –Risk diversification.

Sub Unit II: Security Analysis – Meaning of security – Types of securities – Meaning of security analysis - Fundamental and technical analysis - Valuation, pricing, and trading of securities in financial markets.

Module III: Portfolio Analysis

Sub Unit I: Selection and Evaluation – Meaning of portfolio – Objectives of portfolio

management – phases of portfolio management – Markowitz's Model – Assumptions – Specific model – Risk and return optimization – Efficient frontier – Efficient portfolios.

Sub Unit II: Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT) – Leveraged portfolios – Corner portfolios – Sharpe's Single Index model – Portfolio evaluation measures – Sharpe's Performance Index – Treynor's Performance Index.

Module IV: Bond Markets and Derivative Markets

Sub Unit I: Bond - Types of bonds – Bond returns and price – Preferred stock valuation – Systematic and Unsystematic risk in holding fixed income securities – Major factors in the bond rating process – Earning power – Bond Management Strategies

Sub Unit II: Derivatives - Options: Put and Call option – Mechanics of option trading – determination of option values – Option pricing: Black-Scholes model. Futures: Comparison of futures with option. Technical analysis: Market indicators, forecasting individual stock performance.

References:

1. Fischer, D.E.& Jordan, R.J, Security Analysis and Portfolio Management, Pearson Education, 2018
2. Pandian, Punithavathy, Security Analysis and Portfolio Management, 2nd Edition, Vikas Publishing House Pvt. Ltd, 2013
3. Grinblatt M and S Titman., Financial Markets and Corporate Strategy. 2nd edition, McGraw Hill Irwin, London, 2002
4. Brearley And S C Myers., Principles of Corporate Finance, 4th edition, Tata McGraw–Hill Publishing Company Ltd, New Delhi, 1996
5. Chance D M., An Introduction to Derivatives and Risk Management, 6th edition, Thomson South – Western, 2004
6. Elton E J., M J Gruber, S J Brown and W N Goetzman., Modern Portfolio Theory and Investment Analysis, Ed John Wiley and Sons, New York, 2003
7. Bhalla V K., Investment Management – Security Analysis and Portfolio Management, S Chand and Company Ltd. New Delhi, 2001
8. Prasanna Chandra., Investment Analysis and Portfolio Management, Tata Mc Graw – Hill Publishing Company Ltd, New Delhi, 2003

PART C: SYLLABUS – OPEN ELECTIVE COURSES

OPEN ELECTIVE COURSE - 01: GENDER AND DEVELOPMENT

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
3	MAACO03001	5	4	3

COURSE OUTCOMES:

At the end of the course, the student will be able to;

1. get conceptual clarity on key gender concepts, theories, and analytical frameworks.
2. analyse gender disparities that exist in various aspects of development, including education, health, labour market, and political participation.
3. inculcate sensitivity and understanding of gender-based violence as a development issue.
4. familiarise international initiatives related to women and development.
5. conceptualize the household production unit in a theoretical framework.
6. learn to conduct gender-sensitive policy analysis, considering the differential impact of policies and programs on men and women.

Module I: Conceptualizing Gender and Development

Sub Unit I: The concepts: Gender, sex, patriarchy, empowerment, and intersectionality, Social construction of Gender, Gender Socialization, Gender Discrimination, Gender Stereotyping, Gender Mainstreaming, Gender planning, Gender Responsive Budgeting, Gender Effect – Gender Roles.

Sub Unit II: Mainstream development approaches and critiques – Approach of Women in Development -Women and Development – Gender Development Index – Gender Empowerment measure- LGBTQ+

Module II: Women and Development: International Initiatives

Sub Unit II: United Nations Commission on the Status of Women (CSW) – Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) – International Conference on Population and Development (ICPD) – HeForShe movement.

Sub Unit II: Mexico City conference-Copenhagen conference-Nairobi conference-Beijing Conference- Beijing +5+10+20+- Women and millennium development goals-Women and sustainable development goals.

Module III: Household as an Economic Unit

Sub Unit I: Household production possibility frontier-Utility maximization of household- Utility Maximization in alternate household division of labour. - How is power distributed in households – Motherhood penalty and the impact of family responsibilities on women's careers.

Sub Unit II: Money as power – Effects of patriarchy on household sharing – unpaid care work – Cost of Domestic violence (direct and tangible, indirect and tangible, direct and intangible and indirect and intangible)

Module IV: Gender difference in India and Kerala

Sub Unit I: Gender difference in education, Health and nutrition, Female labour force participation – Earnings and Political representation.

Sub Unit II: Transgender Persons (Protection of Rights) Act, 2019 – Transgender policy in Kerala – Gender Vulnerability index in India and Kerala- Gender difference in time utilization pattern in India – Time use survey 2019.

References

1. Joyce P Jacobsen (2007), The Economics of Gender third edition; Blackwell Publishing.
2. Gender Equality Glossary of Terms and Concepts; UNICEF <https://www.unicef.org/rosa/media/1761/file/Gender%20glossary%20of%20terms%20and%20concepts%20.pdf>
3. UN (2005), The Economic cost of Violence Against Women an Evaluation of the Literature <https://www.un.org/womenwatch/daw/vaw/expert%20brief%20costs.pdf>
4. Kerala Economic Review (2017 to 2021), State Planning Board, Government of Kerala
5. World Conferences on Women; UN Women. <https://www.unwomen.org/en/how-we-work/intergovernmental-support/world-conferences-on-women>
6. Govt. of India Report of Time Use in India 2019. http://mospi.nic.in/sites/default/files/publication_reports/Report_TUS_2019_0.pdf
7. Lourdes Beneria, Gunseli Beric and Maria S Floro (2016) “Gender Development and globalization Economics as if all people mattered, Routledge, Second edition.
8. Nancy Folbre (2003); “Who pays for the Kids? Gender and structure of constraint”; Taylor & Francis e-Library.

OPEN ELECTIVE COURSE - 02: ECONOMICS OF TRAVEL AND TOURISM

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
3	MAACO03O02	5	4	3

COURSE OUTCOMES:

At the end of the course, the students will be able to;

1. understand the travel and tourism industry and its economic significance as a key driver of economic growth, employment, and foreign exchange earnings.
2. analyse the factors that influence travel demand and the supply of tourism-related services
3. evaluate how changes in prices, incomes, and consumer preferences affect travel behaviour.
4. understand the concept of economic multipliers and how tourism activities generate direct and indirect economic effects.
5. Students have the ability in applying economic principles with in the tourism context.

Module-1 Introduction to Tourism Economics

Sub Unit I: Definition and scope of travel and tourism economics –Types of Tourism-Resources in Tourism- Tourism Industry and its Products- The Economics of Tourism Demand – Determinants of travel demand: income, prices, consumer preferences – Levels and Choices in Tourism Demand.

Sub Unit II: Costs and Supply in Tourism – Cost structure and pricing strategies in the travel and tourism industry – Factors influencing tourism supply: accommodation, transport, attractions – Equilibrium in Tourism Markets – The concept of elasticity and its application to travel and tourism – Tourism demand Forecasting.

Module II Tourism Product and Development

Sub Unit I: Tourism as an Industry- Components of Tourism- Concepts of Tourism product- Characteristics of Tourism product- Demand and supply of tourism products- Pricing of tourism products: Stated Preference methods and revealed preference methods.

Sub Unit II: Planning and Development of Tourism - Techniques of Tourism Planning- Designing and managing tourist resorts- Tourism marketing- Market segmentation and tourism market mix- Public and private Investment in Tourism

Module III Economic Impact of Tourism

Sub Unit I: Economic multiplier effects of tourism spending –Economic implications of taxation, subsidies, and incentives for tourism – Economic impacts of tourism policies on local communities and cultural heritage – Tourism's contribution to employment, GDP, and foreign exchange earnings.

Sub Unit II: Political, Social, Cultural, Environmental and economic impacts of Tourism– Sustainable tourism and its economic dimensions. Economic benefits and challenges of ecotourism and responsible tourism - Economic valuation of natural and cultural tourism resources.

Module IV: Tourism Trends and Organisations

Sub Unit I: Recent trends in Indian and International Tourism – Emerging trends and opportunities in travel and tourism industry – Tourism Industry accounting – Receipts and expenditure accounts – Profit and Loss account and Balance sheet

Sub Unit II: National and International tourism concerns and problems – National and International tourism organisations: WTO, PATA, IATA, WTTC – Role and Functions of Governments in Tourism; ITDC, KTDC, DTPC.

Suggested Readings.

1. Bishwanath Ghosh, *Tourism and Travel Management*, Vikas Publications House Pvt.Ltd.
2. Pran Nath Seth, *Successful Tourism*, Vol.1, Sterling Publishers Pvt. Ltd, New Delhi.
3. P.J. Sangar, *Tourism Management*, Anmol Publications Pvt.Ltd, New Delhi.
4. Pran Nath Seth and Sushama Seth Bhat, *An Introduction to Travel and Tourism*.
5. A.K Bhatia, *International Tourism Management*, Sterling Publishers Pvt. Ltd, New Delhi.
6. Jagmohan Negi, *International Tourism and Travel*, S.Chand and Company Ltd, New Delhi.
7. Sipra Mukhopadhyay, *Tourism Economics*, Ann Books India.
8. Ratnadeep Singh, *Infrastructure of Tourism in India*, Kanishka Publishers, New Delhi.
9. M.A Khan, *Principles of Tourism Development*, Anmol Publications Ltd, New Delhi.
10. Sudhir Andrews, *Tourism and Hospitality Industry*, Tata Mc Graw Hill, New Delhi.
11. Vanhove, N (2005) *The Economics of Tourism Destinations*, Elsevier Ltd.
12. Sinclair, M & Stabler, M (1997) *The Economics of Tourism*, Routledge.

OPEN ELECTIVE COURSE - 03: COMPARATIVE ECONOMIC SYSTEMS

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
3	MAACO03O03	5	4	3

COURSE OUTCOMES:

By the end of the course, students will be able to:

- understand the key features, principles, and characteristics of different economic systems.
- compare and contrast the strengths and weaknesses of market-based capitalist, centrally planned socialist, and mixed economies.
- analyse the historical development and evolution of different economic systems.
- apply comparative economic analysis to understand contemporary economic issues and policy challenges.
- enhance critical thinking skills through the evaluation of economic system performance.

Module 1: Introduction to Comparative Economic Systems

Sub Unit I: Definition, nature and scope of comparative economic systems – Historical overview of economic systems – Features of an economic system – Importance of the study of comparative economic systems.

Sub Unit II: Types of economic systems– Primary and secondary economic systems, pure and mixed economic systems, Basic principles and goals of different economic systems.

Module 2: Market-Based Capitalist Economies

Sub Unit I: Definition and features of capitalism – Different stages of the development of capitalism – the problem of inequality, unemployment and stagflation under capitalism – Price mechanism under capitalism.

Sub Unit II: Income distribution and wealth disparities in market economies – the problem of monopoly under capitalism – Role of multinational companies under capitalism – major critique of capitalism.

Module 3: Centrally Planned Socialist Economies

Sub Unit I: Theoretical foundations of socialist economies – Importance of the study of Marxian Economics – The Marxian labour theory of value – Materialistic interpretation of history – Theory of Surplus value – Marxian theory of disintegration of Capitalism.

Sub Unit II: Definition and characteristics of Socialism – Evolution of socialism – the problem of allocation of resources under socialism – Meaning and characteristics of communism– Challenges and limitations of socialist economic systems – The convergence of economic systems.

Module 4: Mixed Economic system and Case studies

Sub Unit I: Definition, features and elements of mixed economic systems – Role of the government and market forces in mixed economies – Examples of mixed economies in practice – A critical appraisal of mixed economy in India.

Sub Unit II: Case Studies: Market Based Economy of USA, Centrally Planned Economy of former USSR, Socialist Economy of Cuba, Transitional economy of China, Mixed Economy of Sweden, command economy of North Korea, Islamic economy of Saudi Arabia.

References

1. Bornstein, M. (1965). *Comparative economic systems: Models and cases*. M. Bornstein (Ed.). RD Irwin.
2. Carson, R. L. (2017). *Comparative Economic Systems: V. 2: Transition and Capitalist Alternatives*. Routledge.
3. Loucks, W. N. (1961). *Comparative economic systems*.
4. Gruchy, A. G. (1966). *Comparative economic systems: competing ways to stability and growth*.
5. Gregory, P. R., & Stuart, R. C. (1985). *Comparative economic systems*.
6. Aligica, P. D., & Tarko, V. (2014). Institutional resilience and economic systems: lessons from Elinor Ostrom's work. *Comparative Economic Studies*, 56, 52-76.
7. Rosefelde, S. (2002). *Comparative economic systems: Culture, wealth, and power in the 21st century*. John Wiley & Sons.
8. Pryor, Frederic L. "The Islamic economic system." *Journal of Comparative Economics* 9.2 (1985): 197-223.
9. Hassan, K., & Lewis, M. (Eds.). (2009). *Handbook of Islamic banking*. Edward Elgar Publishing.

OPEN ELECTIVE COURSE - 04: DISASTER MANAGEMENT

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HOURS
3	MAACO03O04	5	4	3

COURSE OUTCOMES:

At the end of the course, the students will be able to,

- gain comprehensive understanding of the concepts and definitions related to disasters, types, causes, and their impact on communities and the environment.
- learn the principles of disaster preparedness and planning and understand the key components of emergency response and coordination
- assess post-disaster needs, plan and implement recovery projects, and support affected communities in rebuilding their lives.
- explore the use of technology and geographical information systems (GIS) in disaster management, including early warning systems, remote sensing, and data analysis
- understand the nature and causes of different disasters happened in India and Kerala and evaluate the success of mitigation measures adopted during the disasters.

Module I: Concepts and Definitions

Sub Unit I: Understanding the concept and definitions on disaster, hazards and disasters, Risk and Vulnerability in disasters- Disaster and Development, and Disaster Management.

Sub Unit II: Types of Disaster: Natural Disasters-Flood, Cyclone, Earthquake, and Landslide- Man made Disasters-War, Fire, Industrial Pollution, Nuclear Disaster, structural failure of buildings and bridges, Rail and Road Accidents, Terrorism-Biological disaster-epidemics, pandemic, pest attack.

Module II: Disaster Preparedness and Response

Sub Unit I: Disaster Preparedness: Concepts and Nature-Disaster Preparedness Plan- Prediction, Early Warnings and Safety measures of Disaster- Role of IT in disaster preparedness- Role of Government, Role of Education, and Training-Role of International and NGO Bodies.

Sub Unit II: Introduction on Disaster Response-Response Plan-Medical health response to different disasters-Psychological Response: Trauma, Stress, Rumor and Panic-Rehabilitation, Reconstruction, and Recovery.

Module III: Mitigation and Management Technique of Disaster

Sub Unit I: Mitigation of Disaster-structural and non-structural mitigation of disasters- Disaster management cycle- pre-disaster, During Disaster and Post-Disaster-disaster management policy-National and State Bodies of Disaster Management.

Sub Unit II: Usage of GIS and Remote sensing techniques in disaster management-Prepare a report on recent disaster at Local, State, and National Level.

Module IV: Disaster Management in India

Sub Unit I: Disaster Profile of India-Disaster Management Act of 2005-Main disasters in India and Lessons Learnt.

Sub Unit II: National Policy on Disaster Management-National Guidelines and Plans on Disaster Management-Role of Government (Local, State and National), Non-Government and Inter-Governmental Agencies.

Reference

1. Dr. Mrinalini Pandey, Disaster Management, Wiley India Pvt. Ltd.
2. Tushar Bhattacharya, Disaster Science and Management, McGraw Hill Education (India), Pvt. Ltd.
3. Coppola DP, 2007, Introduction to International Disaster Management, Elsevier Science (B/H), London
4. R.K. Bhandani, An Overview on Natural and Man-made Disasters and their Reduction, CSIR, New Delhi.
5. H.N Srinivasa & G.D Gupta, Management of Natural Disasters in Developing Countries, Daya Publishers, Delhi 2006.
6. Disaster Management Act 2005, Published by Govt. of India
7. Publications of National Disaster Management Authority (NDMA) on Various Templates and Guidelines for Disaster Management.
8. J.P Singhal, Disaster Management, Laxmi Publications.
9. C.K Rajan, Navale Pandharinath, Earth and Atmosphere Disaster Management: Nature and Man-made.
10. Shailesh Shukla, Shamna Hussain, Biodiversity, Environment, and Disaster Management, Unique Publications.